BB-4-D902 Vehicle Mount Horizontal Drive Pump Specification

Pump Performance and Rating:

The pump/engine shall perform to the standards of ISO 9 (Texas Only) and NFPA 1906 medium pressure rating of 50 GPM. Typical pump performance from 5 foot draft under standard NFPA conditions shall be 55 GPM @ 350 PSI, 95 GPM @ 250 PSI, 103 GPM @ 150 PSI, and 104 GPM @ 100 PSI.

The pump shall provide a maximum pressure of 395 PSI and a maximum flow of 106 GPM. It shall be capable of operating to a maximum pressure of 600 PSI and be capable of passing a hydrostatic test of 500 PSI for 10 minutes per NFPA 1906 specifications – NO EXCEPTIONS.

Pump Suction/Discharge Ports:

The pump intake shall be a 2" Male NPSH hose thread and be an integral part of the pump intake cover. The pump discharge shall be a 1-1/2" Male NPSH hose thread and be an integral part of the pump body. The pump intake and discharge shall be in locations where applicable hose thread adapters can be installed without interference.

Pump:

The pump shall be a 4-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 3.67 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. Both bearings must be maintenance free – NO EXCEPTIONS. 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.

A 1-1/2 NPSH priming port shall be located on the top side of the pump near the intake cover. The pump shall be coupled to a 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 diesel 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 horizontal 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 horizontal speed increaser shall be painted red.

Engine:

The engine shall be a 4-cycle Liquid Cooled Naturally Aspirated Kubota D902-E4B diesel engine. The engine rating shall be 24.8 HP at 3600 RPM with a maximum torque of 40.6 lb-ft at 2600 rpm. The engine shall have a 2.83 bore, 2.9 inches of stroke, and a displacement of 54.8 cubic inches. The engine shall meet current EPA and CARB emission standards.

The electrical system of the engine shall be 12 VDC. It shall also have a 40 amp regulating alternator and be pre-wired to connect to a mating control harness via an industrial sealed connector.

Muffler:

The engine muffler shall be mounted vertically with the option of a forestry approved spark arrestor or rain cap.

Priming:

The pump shall provide the following pump priming options: a guzzler type hand 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 ship loose with the unit with all the essential hardware items and hose needed to connect it to the pump up to 6 feet away.

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 electric primer shall weigh 8.1 pounds. It shall ship loose with the unit with all the essential hardware items and hose needed to connect it to the pump up to 6 feet away.

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.

Mounting:

The pump/engine shall have four leg mounts.

Control Panel:

The pump shall have the capability of being supplied with any of 2 types of remote control panel options. The panel connector must mate directly to the industrial connector supplied on the engine harness – NO EXCEPTIONS. The two options shall be a PMSCP-DIESEL (panel mount standard control panel), and a LOFA EP250 Series Control Panel.

1. The PMSCP-DIESEL panel shall be a flush mount flat panel with the following features and controls: Push button panel On/Off switch (lit when the panel is on), push button engine start, red LED low oil pressure warning light, red high temperature coolant warning light, liquid filled dual unit 0-600 PSI/0-4000 kilopascals pump discharge pressure gauge, vernier throttle with red emergency throttle idle push button, low pump pressure protection switch (lit when on), and a cut out for mounting an electric primer chrome momentary toggle switch. The panel shall be wired and the wiring shall terminate with an industrial connector. All panel wiring shall be color coded or labeled to directly correspond to the mating engine or extension harness. All electrical components shall be weather resistant.
2. The LOFA panel shall be a face mountable aluminum enclosure with the following features and controls: rotary Off/Run/Start Switch: LED indicators for glow plug preheat, alternator charge failure, low oil pressure, and high coolant temperature; coolant temperature gauge, oil pressure gauge, voltage gauge, tachometer, and hour meter. The panel shall be wired and the wiring shall terminate with an industrial connector.