



Town of Wales Fire Department
3 Hegan St. Wales, MA 01081

Town of Wales FD RFP for a 3000 Gallon Tanker Pumper

SECTION 1: BOOSTER TANK

1.00

The 3000 gallon tank shall be elliptical in design and constructed of polypropylene sheet stock. The tank and its integral support structure shall be manufactured from a high impact. The fabrications shall be welded construction using nitrogen-shielding gas for optimum weld consistency and purity. Exterior seams are to be extrusion welded for maximum strength and integrity.

The tank shall be self-supportive in design. The integral and internal supports must not contain non-polymer material in their construction. The barrel shall be constructed with 3/8" sheet in a series of prefabricated sections utilizing one piece cell modules containing 3/4" and 1/2" thick partitions to form the tank. Each cell module shall contain one longitudinal and one transverse partition creating an NFPA compliant compartment type baffling system.

The Closed-Curve(TM) compartment type baffling system shall include primary transverse partitions and end walls that shall extend down to the bottom of the support sills. Channel shaped longitudinal sill supports shall be externally welded to the underside of the barrel and to the tank end walls as well as to the primary transverse partitions. These longitudinal sills shall be constructed from 3/4" PT2E polypropylene and shall be fully extrusion welded. Drain holes shall be provided at the ends of each section.

Provisions are to be incorporated for air and water to adequately pass through the Closed-Curve baffles to facilitate filling and evacuation requirements and shall be staggered in an efficient design to reduce water turbulence while in motion.

**The Tank Shall Carry a Lifetime Warranty from Its
Manufacture**

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" polypropylene and shall be a minimum dimension of 16" square. The tower shall be located at the rear of the tank and centered left & right. The tower shall have a 1/4" removable polypropylene screen and a polypropylene cover hinged to the side of the tank. Inside the fill tower shall be fastened a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimal I.D. of 6" that is designed to run through the tank with deflector shield.

The tank shall be mounted to the truck chassis utilizing a structural tubular steel sub-frame, which provides a properly cushioned mounting surface for the tank. Captive mounting brackets adequately sized for the tank shall be provided to attach the tank to the sub-frame utilizing a cushioned isolator for positive and negative vertical retention. The sub-frame shall be bolted to brackets fastened to the side of the truck chassis. There shall be a 1" polypropylene strip attached to the underside of the sub-frame to isolate the sub-frame from the chassis. The forward section of the strip shall have a double-tapered relief to eliminate point loading the frame rail.

The exterior portion of the tank that is visible shall be jacketed by a 22-gauge type 304, mirrored finish stainless steel to provide added protection to the tank. There shall be Styrofoam filler panels fastened to the outside of the tank shell to provide internal support for the stainless steel jacket. The jacket shall be held in constant tension and attached to the tank utilizing stainless steel hardware.

1.01 Tank Sizes

1.01.05 All-Poly 3000 gallon

1.02 Rear Fill Tower

Tank has an overhead fill tower with lid, located at the rear center of tank. Fill tower is constructed of 1/2" polypropylene with minimum dimensions of 16" square. The tower has a 1/4" removable Poly screen and a polypropylene hinged-type cover. The vent overflow is a minimum of schedule 40 Poly pipe with a minimal I.D. of 6" that is designed to run through the tank.

SECTION 2: HYDRANT FILLS AND TANK LEVEL

2.00 Street Side Hydrant Fills

Hydrant fills provided at the rear of the apparatus are all equipped with an integral 30-degree elbow and a 3/4" bleeder valve. All direct fills will be equipped with a valve (butterfly for valves greater than 4"), cap, and chain. (Cap holder for 3" and below)

2.00.04 Street Side 4" Storz

2.01 Curb Side Hydrant Fills

Hydrant fills provided at the rear of the apparatus are all equipped with an integral 30-degree elbow and a 3/4" bleeder valve. All direct fills will be equipped with a valve (butterfly for valves greater than 4"), cap, and chain. (Cap holder for 3" and below)

2.01.04 Curb Side 4" Storz

2.02 Tank Level Gauge

- Pressure transducer mounted on the outside of the tank in an easily accessible area. Sealed foam tanks (if so equipped) will require zero pressure vacuum vents.
- Super bright LED display viewable from 180 degrees with a visual indication at multiple accurate levels.
- Weather resistant connectors to connect to the digital display, the pressure transducer, and the apparatus power. Additional displays are easily integrated and will receive data from the same source as the Master Display; no additional transducers required.
- Tank level gauge indicates the liquid level on easy to read LED display.

2.02.01 One (1) Innovative Controls SL Series 14 Tank Level Gauge

2.02.01.01 Installed on the street side pump panel. –Tanker/Pumper Master

2.02.01.03 Installed at the rear street side. –Additional

2.02.01.04 Installed on the center console. –Additional

2.04 Storz Wrenches

Storz wrenches. Four Storz spanner wrenches with holder

2.04.01 Installed on the street side rear panel

SECTION 3: DUMP VALVES AND CHUTES

All dump valves will be Newton 10" square stainless steel Kwick-Dump Gate style (full flow). Flip chutes and telescopic chutes to be Stainless steel. For improved water flow, the dump valve is attached directly to the tank and not by use of a rear manifold system.

3.02 Electric Dump Valve

Equipped with an electric operated Newton 18" telescoping chute. The single activation switch for the side dump valve and telescoping chute. Control switches are located at the rear panel.

- 3.02.01 18" telescoping chute installed on the rear dump valve.
- 3.02.02 18" telescoping chute installed on street side dump valve.
- 3.02.03 18" telescoping chute installed on curb side dump valve.

3.03 Additional dump valve switches

A secondary control switch for the electrically operated dump valve and telescoping chute. The second set of switches will be located in the cab with a light indicating when the valve is open and telescoping chute is extended.

- 3.03.03 Secondary switches for three (3) dump valves.

SECTION 4: PORTABLE TANK CARRIER

4.00 Manual Tip-down Portable Tank Carrier

One (1) manual tip-down portable tank carrier for loading/unloading of a folding water tank located above the catwalk and designed to fold down over the body side. When in the up position the tank carrier will be secured with heavy duty locking DeStaco latches. The tank carrier is constructed of 1 1/4" 14-gauge stainless steel square tubing.

A red "Carrier down" flashing LED warning light visible to the driver will illuminate when the portable tank carrier is not in the stowed position.

- 4.00.08 3000 gallons, curb side

4.01 Manual Carrier Enclosure Options

All portable tank carrier enclosure options are enclosed on four sides and are equipped with two grab rails, except for the wind deflector. The wind deflector option is installed on the tank carrier towards the front, and only has one grab rail.

- 4.01.01 Portable Tank Carrier with front aluminum Tread-brite wind deflector.

4.06 Portable Tank

Fol-Da-Tank® portable tank with frame. The tank liner is constructed of nylon -coated material, 23 oz. side walls and a 30 oz. floor with handles installed in the floor for ease of folding. All portable tanks will have two outlets. The portable tank will be red in color and furnished with a capacity of:

- 4.06.08 3000 Gallons, Aluminum Frame

SECTION 5: BODY AND COMPONENTS

Sub-frame

Construction includes a dedicated body sub-frame which is:

- Integral to the tank cradle and constructed using extruded .25" thick aluminum tubing.

- Designed to support the body structure and to provide maximum support for the weight of the body and all stored equipment.

Body

- The body will be attached to the sub-frame using rigid fasteners isolated by fitted rubber bushings.
- The mounting system provides secure attachment of the body to the sub-frame while allowing sufficient range of movement between the two assemblies.
- The body will be enclosed on all sides and incorporate closed wheel wells and finished storage compartments.
- Stainless steel corner guards to protect from damage on road and fire scene.
- Front lower vertical surface of body protected with aluminum Tread-brite.

Tank

- The tank is held front and rear as well as side-to-side by additional cradle structures to prevent the tank from shifting during vehicle operation.
- The tank is affixed to the cradle utilizing hat channel mounting brackets constructed of ¼" thick stainless steel. The channels are mounted beneath the center of the tank before and after the cross members of the cradle. The channel is surrounding these members and is bolted directly to the bottom of the tank thereby securing the tank to the cradle.
- This mounting system provides a free-floating connection of the tank to the cradle which allows the chassis frame's normal movement and twist to introduce no stress upon the tank or body.

Fenders

- Fenders will be integral with the side of the body.
- Fender wells are constructed with full circular copolymer polypropylene thermoplastic inner liners for ease of cleaning and maintenance.

Materials

- The entire body is fabricated from non-corrosive, stress-relieved virgin copolymer polypropylene thermoplastic material.
- All exterior body joints and seams are extrusion welded.
- All welds will conform to DVS and AWS standards.
- All joints, seams, and welds will be tested for integrity and are certified to be free from defects.
- All joints and are 100 percent welded inside and out; no skip welding is permitted.

THE BODY WILL CARRY A LIFETIME WARRANTY FROM ITS MANUFACTURER

5.00 Fenderettes

Bright polished aluminum fenderettes are installed on the wheel wells to prevent splash and enhance appearance. The fenderettes extend approximately 1" beyond the body side and are designed to be replaced. All fasteners will not be exposed to the exterior of the fenderettes or body.

5.01 Rub Rail

The bottom edge of the entire apparatus will have an aluminum rub-rail installed to give the body, pump house, and rear step a pleasing appearance. The rub-rail is replaceable, made from solid extruded aluminum and features a reflective stripe at the rail center.

5.02 Tow Eye

The tow eye will have a 3 ½" thru hole, made from 1 inch thick A36 cadmium plated steel and bolted directly to the frame with 8 cadmium plated bolts.

5.02.01 Tow eye located ahead and below the rear step on curb side.

5.03 Cradle

An all-aluminum cradle is engineered and constructed to connect the chassis frame with the copolymer tank and body, and is constructed using extruded aluminum tubing .25" thick and extruded aluminum flats .375" thick. Cradle cross members are spaced to restrict unsupported portions of the tank between cross members to a maximum of 550" squared. There are cushioned rubber extrusions placed over all tank support areas to isolate the tank from the aluminum cradle.

SECTION 6: BODY COMPARTMENTS

6.00 Street Side Compartments

- A sweep-out style compartment provided on the street or curb side, integral to the body, constructed using white copolymer material.
- Each compartment will have a R-O-M anodized aluminum roll-up door, door activated LED compartment lights, corrosion resistant vents, black Turtle Tile plastic dry decking, and floor drains.
- Compartments at wheel height or below (located ahead or behind rear wheels) are 26" deep.
- Full height compartments have stepped depth: 13" above the wheel wells and 26" at wheel height or below.
- Compartments located above the wheel wells are 13" deep.

6.00.01 Street Side Front Low Side Compartment

Standard Compartment is located on the street side, ahead of the rear wheels. Approximate inside dimensions are 31" wide by 34" tall by 26" deep.

6.01 Curb Side Compartments

- A sweep-out style compartment provided on the street or curb side, integral to the body, constructed using white copolymer material.
- Each compartment will have a R-O-M anodized aluminum roll-up door, door activated LED compartment lights, corrosion resistant vents, black Turtle Tile plastic dry decking, and floor drains.
- Compartments at wheel height or below (located ahead or behind rear wheels) are 26" deep.
- Full height compartments have stepped depth: 13" above the wheel wells and 26" at wheel height or below.
- Compartments located above the wheel wells are 13" deep.

6.01.01 Curb Side Front Low Side Compartment

Standard Compartment is located on the curb side, ahead of the rear wheels. Approximate inside dimensions are 31" wide by 34" tall by 26" deep.

SECTION 7: RUNNING BOARDS, CATWALKS, AND REAR STEP

7.00 Running Boards

A 12" wide running board is located at the base of the pump house and is made from Diamondback® deck plate and includes a replaceable extruded aluminum rub rail.

7.01 Catwalk

Catwalks are located above the street and curb side compartments, made of polished aluminum Tread-Brite and bent at a 30-degree angle to provide a drip rail.

7.02 Rear Step

The 12" deep rear step is NFPA compliant and made of top of the line Diamondback® extruded aluminum deck plate with a 7" tall kick plate. Rounded polished aluminum castings installed on the corners of the step.

SECTION 8: GRAB RAILS AND FOOT STEPS

8.00 Grabs Rails

The grab rails are made of 1 ¼ " diameter extruded aluminum tubing with knurled finish and chrome plated stanchion brackets.

8.00.01 Tank Grab Rails

There are two (2) vertical grab rails provided at the rear, one each side.

8.00.04 Tank Grab Rail - Street side

There is one (1) grab rail located on street side of tank in the upper front corner for ease of loading and unloading hose cross lays.

8.01 Folding Access Steps

As per NFPA 1901 standards, all steps are a minimum of 35" square with polished stainless steel kick-plates

8.01.04 Lower Level Rear Folding Steps

Large chrome-plated illuminated folding steps provided at the rear for access to the catwalk area. The steps are a minimum of 35" square with polished stainless steel kick-plates. Other locations available below.

8.01.04.03 Two (2), Both Street and Curb Side

8.02 Access Ladders

8.02.03 Hose Bed Access Ladder

An aluminum access ladder, located at the rear of tank above the dump valve for over-head access, featuring 1 1/4" diameter knurled tube rails and serrated rungs.

SECTION 9: ELECTRICAL EQUIPMENT

9.00 Electrical System

- The electrical system will utilize Class1 Inc. ES-Key™ technology, UltraView™ displays and 1Touch switch modules, where applicable.
- The apparatus is equipped with a Class 1 ES-Key Management System for controlling electrical system devices. This management system is capable of performing load management functions, system switching, monitoring and reporting, and be fully programmable for a standardized electrical system utilizing the ES-Key Professional software program.
- The ES-Key system utilizes a Controller Area Network (J1939) protocol to provide multiplexed control signals for "real time" operation. The system consists of a main control module (Universal System Manager or Supernode II) and the appropriate combination of Power Distribution Module(s) (PDM), Switch Input Module(s) (SIM), and other I/O modules as required for the application.
- Optional system enhancements may include the UltraView™ 700 display, the UltraView 450 display and 1Touch switch modules for increased graphic user interface.
- Supernode II™

The apparatus is equipped with a Class1 ES-Key™ system with a Supernode II™ high density input output node. The Supernode II™ has (24) inputs, (24) outputs, a Universal System Manager, a data logger, programmable special utilities, and select J1939 engine and drive train message reception with ES-Key™ I/O association. It must be sealed to IP-67 and have integrated power connections.

The Supernode™ has (18) positive and (6) negative outputs. Each positive output is capable of 13 amps continuous duty. The negative outputs are capable of 2 amps continuous duty. Supernode II™ outputs contain features such as digital circuit breaker, flash capability, PWM capability and open load detection.

The Supernode II™ special utility functions include timers (delay on/off and one shot), counters, bi-stable switches, and select J1939 broadcast messages. The Supernode II™ has an integrated USB port to allow for direct connection to the ES-Key system without additional interface devices.

The Supernode II™ has an integrated Load Manager. The Load Manager sequencer assures that loads are applied and removed gradually, thus eliminating the possibility of inducing failures in the vehicle's equipment.

The load manager is a precision, solid state controller which sequentially switches "ON" multiple circuits at 1/2 second intervals. Individual switches enable the user (Driver) to select output "ON or "OFF" status, at any time. The sequencer is initiated by the "Emergency Master" switch. The sequencer priority is programmed based on option content.

The aforementioned Load Manager monitors the vehicles battery voltage. Loads may be shed at any voltage at one tenth of volt increments. A low voltage warning may be set at any set point (usually 11.5 volts). The load manager can shed any output that is controlled by the system (there is no limit to the number of loads that may be managed by the network).The load shed priority is set by the circuit significance, followed closely by circuit draw. The Load Manager sheds loads until the voltage level begins to rise.

- Voltage Monitor: A voltage monitor is built into the ES-Key electrical system. It activates a warning when the alternator output voltage falls below any desired voltage (usually 11.5 volts).
- UltraView™ 700 Display

The apparatus is equipped with the UltraView™ 700 display (UV700). The UV700 is a 7 inch, full color LCD display, with (14) buttons and touch screen capability with (2) J1939 CAN Bus connections and (3) NTSC/PAL video inputs. It is bonded for direct sunlight viewing, sealed to IP67 and mounted in either the flush, pedestal or rear-mount position.

The UV700's switches is configured to allow for the control of emergency master and non-emergency master functions and are completely configurable via the ES-Key™ Professional software. Switches are set to act as momentary, maintained or three-way switches without any physical hardware change. All switches and or indicators may be configured as touch screen inputs into the ES-Key™ system. The (14) buttons are blue LED backlit.

- 1Touch Switch Modules

The apparatus is equipped with the appropriate quantity of 1Touch switch modules for enhanced device activation. The 1Touch switch module has a 4-button, configuration to accommodate specific apparatus requirements. Individual switches are backlit with multiple colored and textured switch caps and printable labels. Switch panels are sealed to IP67 and have dual LED indicators. Each switch position's back light may be individually controlled allowing for the specific switch position to be used as an indicator. Each switch pair can be configured to momentary, maintained, toggle or a dimmer. Panels can be included in network dimming.

9.01 DOT Lighting Details

- A total of nine (9) LED clearance lights and seven (7) red LED lights installed at the rear.
- Two (2) amber LED lights are installed on the front street and curb sides.
- Reflectors are installed per DOT specifications.
- A red warning light visible to the driver in the chassis cab that illuminates when a compartment door is ajar/open.
- An illuminated license plate bracket installed at rear.

9.02 Lower Level Rear Lighting

9.02.01 Quad-cluster Tail Light Package

Two (2) LED Quad-Cluster combination red LED stop/tail, clear halogen backup light, amber LED arrow type turn signal, and red LED warning light, installed at the rear. Light assemblies provided in chrome plated housing.

9.02.01.01 Whelen 600 Series Quad-Cluster

9.02.03 Side Mount Turn Signals

LED side-mounted DOT approved turn signal repeaters, mounted between the rear wheels on the body side to provide visible lateral turn warning.

9.03 Radio

9.03.01 Customer Supplied Radio

There will be a designated area in the center console for the customer to install two (2) radios. Power will be supplied to the center console for the radios.

9.03.02 Antenna

Two (2) antennas will be install by the manufacturer for future use. Customers will supply radio information to manufacturer for correct antenna installation.

9.04 Camera System

9.04.01 Rear view camera

One (1) rear view camera system installed. Camera system includes a wide-angle rear mounted camera and 7" monitor.

9.04.01.02 Rear View Safety®

SECTION 10: EMERGENCY SIREN AND LIGHTING EQUIPMENT

10.00 Apparatus Control Center

All emergency lighting, options, and accessories are controlled at a master control center in the cab.

The apparatus control center:

- Controls all warning lights and scene lights
- Includes the "Master On" and "Open Door" and other optional indicator lights
- UV700 Multiplex display – If equipped.
- Controls other optional functions if equipped. (I.E. Electric Dump Valves, Pump Shift)
- Mounted Electronics, Sirens, and Radios – If equipped.
- Features lighted identification plates on a non-glare panel face that clearly identify each switch and its function.
- Top plate bolted on for maintenance and adding additional items.

All warning packages are fully NFPA compliant and certified by the lighting component manufacturer to meet all requirements.

10.01 Light Bars:

The light bar is mounted on the cab roof.

10.01.01 Whelen model JE2NFPA Justice Series light bar

Whelen model JE2NFPA Justice Series, Super-LED low-profile, 56" long. Covers front and front side zones. The light bar has four (4) linear corner modules with nine (9) Super-LED light heads per module, and six (6) CON3 modules with three (3) CON3 Super-LED light heads per module.

10.02 Sirens:

10.02.01 Whelen Siren

Whelen model 295SLSA1 Siren 200 watt, Six (6) function Class A electronic siren, mounted in the chassis cab in a location convenient to the driver. The electronic siren includes full function, 17 Scan-Lock siren tones, and hard wired microphone. The siren control is lighted for easy night operation. Available with three (3) siren mounting locations.

10.02.01.03 Cast Products siren speaker flush mounted curb side

10.04 Lower Level Lights

10.04.03 Front/Rear Whelen 600 Series

Two (2) Whelen 600 series lights mounted to the grill of the chassis and two (2) mounted on the rear of the body in the quad-cluster with a chrome trim ring.

10.04.03.01 Front/Rear Flashers, Red, 600 Series

10.05 Intersection Lights

All lights mounted above 18" from the ground, and no higher than 60", (preferably centered in the reflective striping if present). One (1) positioned as far forward on the hood as possible, one (1) positioned behind the cab but in front of the rear wheels if three (3) lights per side are requested, and one (1) positioned as close to the rear of the truck as practical. Lights will include a chrome bezel.

10.05.02 Intersection, Red, 600 Series, Three (3) each side

10.06 Upper Level Lights

10.06.99 Whelen RB6T Rota-Beam on Stanchion Brackets

Two (2) Whelen model RB6T Rota-Beam lights cover the rear and rear side zones. The Two (2) lights are positioned at the rear corners on stanchion brackets.

10.06.99 Curbside Red

10.06.99 Streetside Amber

10.07 Scene lights

Lights are controlled from individual switches on the control center located in the chassis cab.

10.07.04 Six (6) Whelen LED Scene Lights

There are two (2) Whelen 600 Scene Lights and four (4) Whelen 900 Scene Lights. Two (2) 900 series are mounted on the front and rear of each the street and curb side, and one (1) 600 series each on the street and curb side on the back of the truck.

10.09 Ground Lights

10.09.01 Four (4) ground lights

There are four (4) LED ground lights installed to illuminate the area below the apparatus. Two (2) lights are installed on street and curb side below the front body, and two (2) lights are installed on street and curb side below the rear step area. Grounds lights will be activated when parking brake is applied.

10.10 Accessory Lights

10.10.02 Whelen Traffic Advisor model TAL65

There is one (1) Whelen Traffic Advisor model TAL65, supplied. Traffic Advisor is 36" wide, with six (6) LED lamps mounted on the upper rear of the tank and activated by a control head in the cab.

SECTION 11: PAINTING, LETTERING, STRIPING, AND SIGNS

11.00 Painting process

The entire tank, body, and components will be washed, sanded, prepped for primer, cleaned and primed with PPG urethane primer filler. The body will be hand sanded and color match painted using a PPG Deltron base coat/clear coat paint. After paint is applied and properly cured the apparatus will be color sanded and buffed to a high gloss. The paint process is approved by PPG.

A two (2) ounce container of matching touch-up paint, with applicator brush, will be supplied for each color of the finished apparatus.

11.00.01 Color Matched Red

11.00.01.04 Color Matched Red, 3000 gallon

10-YEAR WARRANTY ON PAINTED BODY PARTS

11.01 ID plate

There is a permanent plate located in the center top chassis cab with the following information:

- Quantity and type of fluids used in the vehicle. This plate includes:
 - Engine oil, quantity.
 - Engine coolant, quantity.
 - Chassis transmission fluid, quantity.
 - Pump transmission fluid, quantity.
 - Drive axle lubrication fluid, quantity.
 - Air conditioning refrigerant, quantity.
 - Air conditioning lubrication oil, quantity.
 - Power steering fluid, quantity.
 - Front and rear cold tire pressure

- Number of personnel the vehicle is designed to carry located in an area visible to the driver.
- Height and length of the vehicle in feet and inches
- Gross vehicle weight rating (GVWR) in pounds

11.03 Gold leaf vinyl lettering with a black shadow

- 11.03.01 Provided on the chassis doors.
- 11.03.03 Provided for the customer unit number on the street and curb side chassis fenders.

11.05 Reflective striping

The apparatus body and chassis will have a reflective stripe on each side and the front per NFPA 1901 standards.

- 11.05.01 4" wide white reflective stripe with a 1" wide white reflective stripe spaced approximately 1/2" above.
 - 11.05.01.02 Tandem Axle
- 11.05.03 White reflective tape inside chassis doors- Per NFPA 1901 standards any door designed to allow persons to enter or exit has a minimum of 96 square inches of retro-reflective material affixed to the inside of the door.

11.06 Rear Chevron

11.06.03 Diamond Grade Chevron 50%

Per NFPA 1901 standards, 50 percent of the rear will include red and fluorescent yellow/green diamond grade chevron retro-reflective striping installed, with each stripe a minimum of 6" wide.

SECTION 12: CORROSION PROTECTION AND MUD FLAPS

12.00 Corrosion Protection

The All-Poly Series body has a number of features which prevent corrosion.

- All fasteners are stainless steel.
- All fasteners which are used in aluminum are plated with Magnaguard 560 to prevent galvanic corrosion resulting from dissimilar metals.
- All contacts of dissimilar metals are insulated with 3M products to prevent galvanic corrosion.
- Rub rails are Type II bright dip anodized.
- Tow rings are cadmium plated steel.

- The Poly body material eliminates the need for undercoating and sprayed on coating inside storage lockers.
- The Poly body material is non corrosive and is frequently used for storing acids.
- The Poly body material eliminates many possibilities of dissimilar metal contact caused by galvanic reaction.
- The pump house frame is made from 304 series Stainless steel which resists corrosion better than aluminum.
- All seams are 100% welded inside and outside, eliminating rust between panel flanges.

12.01 Mud Flaps

There are two mud flaps installed behind the rear wheels.

- The mud flaps are ¼ inch thick black rubber.
- The bottom of the mud flaps are fitted with chrome weights.

SECTION 13: PUMP AND PLUMBING

13.00 Pump House

13.00.01 Side Control Pump House

The pump compartment features:

- The superstructure frame is made from .125" wall X 2.00" square type 304 brushed 4B finish stainless steel tubing.
- The front and a portion of the rear of the pump compartment is made from type 304 brushed 4B finish stainless steel sheets to enclose the perimeter of the water pump.
- The street and curb sides of the pump compartment are equipped with side running boards. The running boards extend along the width of the pump compartment from the rear of the chassis cab to the forward end of the body module. The running boards are constructed of Diamondback® deck plate.
- Running boards include extruded aluminum rub rail extending the length of the running boards.
- The step surfaces are in compliance to applicable sections of NFPA 1901 requirements.

13.00.01.05 Pump House 30" wide, Notched Tank

13.03 PTO Driven Pumps

PTO Pumps have the following standard features:

- All PTO driven pumps have pump-and-roll capability.

- Helical design and precision-cut gears to reduce noise and minimize wear
- Double seal ring design solid bronze impeller
- Stainless steel pump shaft
- Maintenance free mechanical seal
- The street and curb side pump panels and access doors are constructed entirely of aluminum and be covered with black protective material.
- The pump compartment has full width vertically hinged access doors located on the upper portion of the street and curb side pump compartment.
- A latch is furnished to hold the doors closed and have a retainer attached to prevent over extension of the opened door.
- The pump operator panels are to be completely "bolted" or hinged in place for ease of removal.
- A full panel width LED light hood is provided to illuminate the street and curb side pump panels. A service light is provided to illuminate the interior of the pump compartment. Lights are controlled by the operator's panel light switch.
- The operator's panel include the following gauges:
 - Fire Research "Pump Boss 400 Series Auto Governor"
- Features:
 - Discharge pressure in PSI.
 - Pump adjustment back idle.
 - Engine monitoring of oil pressure, water temperature, battery voltage, and engine RPM.
 - Preset function for instant and reliable operation.
 - Overheat pump protection system.
 - "Innovative Controls" 2 1/2" 400# liquid filled stainless steel individual discharge pressure gauges and control handles.
 - One (1) 3 1/2" Master Discharge Gauge and one (1) 3 1/2" Master Pump intake gauge.
 - Color-coded pump panel identification labels are provided for all gauges, controls, connections, switches, inlets, and outlets.
 - The intakes have a removable strainer provided and chrome plated caps.
 - Pump shift is electric operated and incorporates standard automotive shifting mechanism for ease of maintenance.
 - The pump shift switch is mounted in the cab and identified as "PTO Engagement". The pump shift assembly includes an indicating light to show when the PTO has been engaged.
 - A master manifold type drain valve is provided with all pump drains connected to it and operate from the pump operators panel so the entire pump system may be drained by a single control.
 - Per NFPA 1901 standards there shall be pump system test ports mounted on the pump panel.
 - All discharges and pre-connects with an 1 1/2" or larger valve, per NFPA 1901 standards, shall have drains or bleeder valves, having a minimum 3/4" pipe thread connection, for bleeding off pressure from the hose connection to the outlet.

- Per NFPA 1901 standards there shall be a suction relief valve installed on the intake sides of the pump, terminated with a NST male threads.
- A 4" tank to pump line provided from the water tank to the pump. The line has a 3" Elkhart Unibody swing out valve with PVC. The flex connections installed between the pump and water tank give the plumbing system flex, thus minimizing stress on the line. The valve is controlled by a "tee" handle control provided on the pump panel.

13.03.09 Hale MBP 1000 PTO Pump

- Pump Ratings: 1000 GPM @ 150 PSI
 700 GPM @ 200 PSI
 500 GPM @ 250 PSI

13.05 Primer Pump Options

13.05.01 Rotary Vane Primer Pump

The rotary vane primer is a 12-volt electric, positive displacement, rotary vane type, oil-less primer for 20' to 30' suction lifts. Priming system includes a bronze push-pull valve with electric switch.

13.06 Suction Intakes

On all pumps, an intake suction relief shall be provided per NFPA 1901 standards. It will be terminated with a 2 ½" NST male adapter.

13.06.01 2 ½" Gated Intakes

Each intake consists of a 2 ½ " NST female chrome plated swivel intake located on the pump panel. The intake has a 2 ½ " valve, swivel adapter with screen, chrome plated plug and chain.

13.06.01.01 One (1) intake, street side

13.06.02 Non-Gated Master Intakes

Master intakes are plumbed out both sides of the pump house and capped with a chrome long handled cap.

13.06.02.03 Two (2) 6" intakes

13.07 Discharges

Discharges include:

- Tee Handle Control
- "Innovative Controls" 2 ½" 400 PSI Liquid Filled Stainless Pressure Gauge
- 30 Degree Elbow, cap and chain

- 13.07.01 Side Control Pump Panel Discharges
 - 13.07.01.02 Two (2) 2 ½" Discharge, Street Side
 - 13.07.01.04 Two (2) 2 ½" Discharge, Curb Side

13.09 Tank Fill/ Tank to Pump

13.09.01 Tank Fill Valve 2"

A 2" tank fill/pump re-circulating line provided from the pump to the water tank, with a 2" valve and a 2" high-pressure flexible hose.

SECTION 14: HOSE TRAYS, PRE-CONNECTS AND CROSS LAYS

14.00 Side hose tray, poly

14.04 PTO Pump Pre-connect hose tray

The hose tray to be pre-connected to the discharge side of the pump. Pre-connect has a "Innovative Controls" 2 ½" 400psi liquid filled stainless steel individual pressure gauge and control handle.

- 14.04.02 Pre-connect terminated with 2 ½" NST male, gated with a 2 ½ " valve.

14.07 Hose Tray Options

14.07.01 Hose tray divider

Hose tray divider installed in the center of the hose tray and 18" back from the front to create two hose compartments

14.07.03 Vinyl Hose tray cover

Cover is attached across the top, inboard edge of the hose tray with a rail and bead system to prevent wind from getting under the cover. Rear of the cover is provided with a flap to cover the back of the hose tray. The cover is attached with a quick release elastic rope and hook system to retain the hose in the tray during travel as required by NFPA. Operating temperature is -40F to 180F.

SECTION 15: EQUIPMENT STORAGE AND MOUNTING

15.00 Suction Hose Trays and Ladder Carriers

- 15.00.06.99 Three (3) trays located on the street side of the tank.
- 15.00.06.99.03 Fits 5"-6" Suction Hose.

SECTION 17: CHASSIS ACCESSORIES

17.01 Hub and Lug nut covers

Stainless steel hub and lug nut covers are installed on front and rear aluminum wheels

17.01.03 Tandem axle chassis.

17.03 Shoreline Connection, Kussmaul HO Series

One 115 Volt Kussmaul HO, air and battery conditioner system installed.

17.03.01 Manual shoreline connection, front sill of front street side locker.

17.10 Accessories

17.10.04 Heat Exchanger

A Heat exchanger permits the use of water from the pump to cool the engine. Cooling is done without mixing the engine antifreeze and the pump water.

17.10.04.01 OEM Installed

17.11 Chassis Exhaust

17.11.02 Vertical Chassis Exhaust Modifications

Chassis exhaust will be a vertical stack to the rear curb side of the chassis cab.

SECTION 18: LOOSE EQUIPMENT

18.08 Wheel Chocks

18.08.01 Two (2) Wheel Chocks, with Holders, Placed into Spare Compartment.

18.10 PVC flexible hard suction hoses

18.10.99 Three (3) 6" x 10'

SECTION 19: CHASSIS

19.00 Manufacturer furnished chassis per specification attached: