

## Lamoine Fire Dept

The apparatus shall be constructed to N.F.P.A. Pamphlet 1903-2003 requirements and the unit shall also meet Department of Transportation regulations.

The unit shall be given the road test as required by N.F.P.A. and weight requirements and both the front axle and the rear axle shall be stated prior to delivery of the apparatus. The weight shall in no way vary from D.O.T. requirements.

The unit shall also meet Federal Motor Vehicle Safety Standards.  
Pump Testing 1901 /2009

One (1)  
10-11-2000

This unit shall be tested to U.L. Spec's at our Plant in order to ensure compliance with applicable standards. The tests include:

-a pump capacity test, to check pump output from draft at 150 psi, 165 psi, 200 psi, and 250 psi, as well as a tank flow test

-a Drafting test, to ensure that the unit can flow water from draft in 30 seconds

-a Vacuum test, to ensure that there are no vacuum leaks

-a Relief Valve test, to ensure proper operation of the relief valve

After this test, a certificate shall be issued showing the pump capacity and RPM, as well as the test date, unit serial number, and no load governed speed of the engine. FMVSS certification and safety mark are also installed.

One (1)  
10-11-2300

Overall length is less than 30'

One (1)  
10-11-2410

Overall height is 129 "

One (1)  
10-11-2500

General Construction Poly body, Steel subframe

The GVWR of the chassis shall be adequate to carry the fully equipped apparatus including full water and other tanks, the specified hose load, unequipped personnel weight, ground ladders, and a miscellaneous equipment allowance in accordance with specified standards. The attached weight study is an estimate of the expected final completed weight of the apparatus with consideration of the expected equipment load by the Lamoine Fire Dept.

One (1)  
10-11-3000

Manuals - two copies

At the time of delivery, two (2) copies of complete operation and service manuals will be provided covering the completed apparatus (body and equipment) as delivered and accepted, including the pump, wiring diagrams, lubrication charts, and fire fighting equipment delivered with the apparatus. Chassis manuals are those supplied by the chassis manufacturer.

One (1)  
10-11-3600

Delivery - FOB Fire Department - \*\*

The successful bidder shall, at his expense, deliver the apparatus to the Fire Department. A

# Lamoine Fire Dept

factory trained and authorized delivery instructor shall then remain with the apparatus to train Fire Department personnel. Training of personnel is essential to ensure that the purchaser and user are aware of, and instructed in, the proper operation, care and maintenance of the apparatus delivered.

One (1)  
10-11-4000 Chassis purchased by the Lamoine F D

Chassis is purchased by the Lamoine Fire Dept. Balance for the body and equipment is due when the completed vehicle is Delivered to the Fire Department ..  
Fire Pump Must be prepaid (\$18000.00 ) upon signing of the contract.

One (1)  
20-00-0000 CHASSIS INFORMATION

One (1)  
20-11-0500 Customer supplied Chassis

The chassis for the vehicle is provided by the customer.  
2010 Emission chassis modifications

One (1)  
20-11-1500

One (1)  
20-21-0500 Fluid capacity plate

A permanent plate shall be affixed in the driver's compartment specifying the quantity and type of the following fluids used in the vehicle as applicable:

- Engine Oil
- Engine Coolant
- Transmission Fluid
- Pump Transmission Lubrication Fluid
- Pump Primer Fluid
- Drive Axle Lubrication Fluid

Air conditioning refrigerant

- Air conditiongn lubricant
- Power steering fluid
- Cab tilt fluid
- Transfer case fluid
- Equipment rack fluid
- Air compressor system lubricant
- Generator system lubricant
- Front tire cold pressure
- Rear tire cold pressure

One (1)  
20-21-0600 Pumping test plate

A plate shall be provided at the pump operator's panel that gives the rated discharges and pressures together with the speed of the engine as determined by the certification test, the position of the parallel/series pump as used, and the governed speed of the engine.

One (1)  
20-21-1000 Maximum riders sign

## Lamoine Fire Dept

An accident prevention sign shall be affixed in the cab stating the maximum number of personnel the vehicle is designed to carry per NFPA standards. The sign shall be located in an area visible to the driver.

One (1)  
20-21-1500

Seat belt warning labels

Signs that state "Occupants must be seated and belted when apparatus is in motion" shall be provided. They shall be visible from each seated position.

One (1)  
20-21-1600

Apparatus Information Label

An information label is provided in the chassis cab, visible to the driver, stating:  
"When manufactured, this vehicle was:

- \*\* m high
- \*\* m long
- \*\* kg GVW

Changes in height since the apparatus was manufactured shall be noted on this plate by the Fire Department"

One (1)  
20-21-2500

Shifter lock not required (Automatic with push button shift)

A transmission shifter lock not required with push button shifter.

One (1)  
20-21-3500

Rear step warning label

An accident prevention sign shall be located at the rear step area of the vehicle. It shall warn personnel that standing on the step while the vehicle is in motion is prohibited.

One (1)  
20-21-3800

Front mudflaps

Heavy duty mudflaps shall be installed behind the front wheels to guard against road wash and debris.

One (1)  
20-21-4000

Rear mudflaps

Heavy duty mudflaps shall be installed behind the rear wheels to guard against road wash and debris.

One (1)  
20-31-0200

Fuel fill label -Ultra Low Sulfur Diesel only

A label indicating "Ultra Low Sulfur Diesel Only" is installed at each chassis fuel tank fill connection.

One (1)  
20-31-0500

Alum tread fuel tank trim, Conv - 2 door

Aluminum tread plate is installed each side over fuel tank and battery box. The original steps are left to allow safe access to the cab as originally designed by the chassis manufacturer.

One (1)  
20-31-1900

Chassis cab painted by Chassis manufacturer

The chassis for this vehicle is not painted, the body will be painted to match the colour of the chassis.

One (1)  
20-41-0600

Intake air shutoff for engine not required

An intake air shutoff valve in the engine air intake piping is not provided.

Chief Skip Smith

## Lamoine Fire Dept

- One (1)  
20-41-0800 Auxiliary braking system w chassis
- One (1)  
20-41-1100 Chassis is not equipped with an auxiliary braking system.  
Transmission lockup-WT
- One (1)  
20-41-1500 The electronic control for the transmission is equipped with a relay to put the transmission directly into pump gear when the pump is placed in "Pump" gear and the transmission is placed in drive.  
Extend exhaust pipe - RS front of rear wheels
- One (1)  
20-41-1900 On units with diesel engines, the exhaust pipe is extended to ahead of the rear wheels on the right side in compliance with the chassis manufacturer's specifications for current emissions.  
Battery boost terminals
- One (1)  
20-41-2000 Battery boost terminals are not required as batteries are accessible.  
Chassis batteries remain in OEM location
- One (1)  
20-41-2600 Chassis batteries will remain in the chassis manufacturer's original location.  
Chassis fuel tank remains in OEM location
- One (1)  
20-41-5000 The chassis fuel tank will remain in the chassis manufacturer's location.  
Rear Tow Pintle Hook - thru rear panel
- One (1)  
20-51-0500 Towing devices will be installed at the rear of the unit, attached directly to the frame of the chassis.  
Master disconnect switch - manual
- One (1)  
20-51-2600 A 2 pole master load disconnect switch will be provided to isolate the batteries from the electrical loads.  
Back up alarm
- One (1)  
20-51-3400 A back up alarm shall be installed at the rear of the unit, wired to operate when the transmission is in Reverse.  
Protection valve installed for air operated accessories
- One (1)  
20-51-4000 An air pressure protection valve is installed to prevent loss of air to brakes from air operated accessories.  
Auto eject for air inlet - LS panel
- One (1)  
20-51-6500 A Kussmaul auto eject air inlet fitting will be installed near the driver's door to allow an external air compressor to keep the chassis air brake system charged.  
Kussmaul battery conditioner w/battery saver
- One (1)  
20-51-6500 A Kussmaul Autocharge is installed with a 120 volt shore line connection mounted on the left side of the body near the driver's door unless otherwise specified in the Shop Note. A 3 amp battery saver power supply is provided to accomodate parasitic loads such and radio and battery chargers.

## Lamoine Fire Dept

One (1)  
20-51-7100 Electric System Manager

The apparatus shall be equipped with a **Class1 Electrical System Manager (ESM)** for performing electrical load management. The **ESM** shall be capable of controlling up to (7) loads according to the voltages which are present.

The **ESM** shall monitor both main and isolated battery banks and indicate low voltage independently when voltage drops below 11.8 volts for more than 2 minutes. The **ESM** will sequence loads on and off at exact intervals when the master switch is toggled. The **ESM** will shed loads when voltage drops below corresponding shed point for 30 seconds. An output shall activate to indicate over-voltage when battery voltage is over 14.5 volts. A fast idle output shall activate when voltage drops below 12.3 volts for more than 1 minute and the appropriate interlocks are in place.

One (1)  
20-51-7500 Auto eject for 110 v - 20 A with enclosure

A Kussmaul auto eject outlet is installed in place of the standard 110 volt shore line connection, 20 A.

Two (2)  
20-51-8500 Engine compartment light

A work light is installed in the engine compartment, controlled by the panel light switch.

One (1)  
20-52-1400 Chassis alternator to remain

The alternator provided with the chassis will remain.

One (1)  
20-60-0400 Chassis wheelbase does not change

The chassis wheelbase provided will be used, no changes to be made.

One (1)  
30-00-0000 PUMP AND PLUMBING

One (1)  
30-11-1100 Hale Q Pak w/J gear box PTO pump 1000 USGPM

1. The pump shall be of a size and design to mount on commercial and custom truck chassis, and have the capacity of 1000 US gallons per minute NFPA 1901 rated performance.
2. The entire pump shall be cast, manufactured and tested at the pump manufacturer's factory.
3. The pump shall be driven by a transmission mounted power take-off (PTO). The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance.
4. The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 500 PSI (34.5 BAR). The pump shall be fully tested at the pump manufacturer's

## Lamoine Fire Dept

factory to the performance spots as outlined by the latest NFPA Standard 1901. Pump shall be free from objectionable pulsation and vibration.

5. The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (2069 BAR). All moving parts in contact with water shall be of high quality bronze or stainless steel. Pump utilizing castings made of lower tensile strength cast iron not acceptable.

6. Pump body shall be vertically split, on a single plane, for easy removal of impeller assembly, including clearance rings.

7. Pump shaft to be rigidly supported by two bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.

8. The pump shaft shall have only one mechanical seal. The mechanical seal shall be spring loaded, maintenance free and self-adjusting. (No exceptions.)

9. Pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined, hand-ground and individually balanced. The vanes of the impeller intake eye shall be hand-ground and polished to a sharp edge, and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.

10. Impeller clearance rings shall be bronze, easily renewable without replacing impellers or pump volute body.

11. The pump shaft shall be electric furnace heat-treated corrosion resistant steel with a positive impeller lock. Pump shaft must be sealed with double lip oil seal to keep road dirt and water out of gearbox.

### Gearbox

1. The gearbox shall be cast, manufactured and tested at the pump manufacturer's factory.

2. Pump gearbox shall be of sufficient size to withstand the torque of the engine thru the transmission PTO pump operating conditions. The gearbox shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.

3. The gearbox drive shaft shall be of heat-treated chromium steel and shall withstand the torque of the engine in pump operating conditions.

4. All gears shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running and higher load carrying capability. An accurately cut spur design shall be provided. (No exceptions.)

## Lamoine Fire Dept

5. The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine, transmission and power take-off selected.  
Valves and controls - side mount panel
- One (1)  
30-20-0500  
All 1" or larger in-line valves will be full flow, drop-out Akron Brass style 8800, or will be manufactured by the pump manufacturer.  
All In-line valves will be controlled by chrome plated locking "T" handles with rods designed to permit easy operation and minimal distortion when opening or closing a valve.  
All 2-1/2" valves for discharges located on the right and left side pump panels will be operated using lever type controls or by chrome plated locking "T" handles located on the pump operators panel.  
All 3" and larger discharge valves will equipped with the Akron SLO-CLOZ option which hydraulically decelerates the opening and closing of the valve to comply with N.F.P.A. pamphlet #1901 requirements.  
Piping galvanized steel - general
- One (1)  
30-20-1500  
All piping will be heavy duty, Schedule 40, galvanized type. Where vibration or chassis flexing may damage or loosen piping, all plumbing exiting the pump enclosure area will be equipped with victaulic or rubber couplings as necessary.  
Wherever threaded joints are used, the sealing compound will be of the non-hardening type to ensure ease of removal for repair or replacement of couplings.  
All piping will be subjected to hydrostatic test consisting of pressurizing the entire pump and valves, including suction lines. Following the pressure test, a vacuum test will be applied to the entire pump and valves. This test consists of developing 24 inches of vacuum and holding that vacuum for 10 minutes while not losing in excess of 10 inches of vacuum.  
1-1/2" thread specifications NPSH / IPT
- One (1)  
30-20-1700  
all 1 1/2" hose threads and adapters are to be npsH/ ipt thread
- One (1)  
30-20-1800  
2-1/2" thread specifications NH / NST
- One (1)  
30-20-2000  
All 2 1/2" hose threads are to be nh / nst  
Piping hydrostatic test
- One (1)  
30-21-9500  
The pump and plumbing shall be hydrostatically tested to a pressure of 500 psi. The Tank Fill and Tank to Pump valves shall be closed; all other inlets and outlets shall be open and capped. This pressure shall be maintained for 3 minutes.  
Tank to Pump 4" Akron Ball valve Electric controller
- One (1)  
30-22-0500  
A 4" Akron quarter turn valve with check valve to prevent accidental pressurization of the water tank through the pump connection is installed in the supply line from the tank to the pump.  
Tank Fill valve 2" Akron
- One (1)  
30-31-4000  
A 2" Akron quarter turn valve is installed in the supply line from the pump to the tank.  
Suction - 6" not gated each side
- Two 6" (not gated) - 1 each side; equipped with long handle chrome caps. Inlets will have

## Lamoine Fire Dept

- removable strainers.
- One (1)  
30-40-2500 3" left discharge, Akron 8800 3", slo cloz
- One (1)  
30-40-3000 3" left side; plumbed with Akron 3" 8800 discharge valve, includes Akron Slo Cloz, 30 degree 3" x 4" Storz adapter, bleeder valve, and blind cap.  
3" right discharge, Akron 8800 3",
- One (1)  
30-44-3500 3" right side; plumbed with Akron 3" 8800 discharge valve operator on pump panel, includes 30 degree 3" x 4" Storz adapter, bleeder valve, and blind cap. (no handwheels)  
2-1/2" Crosslay, Akron 8800 valve
- One (1)  
30-51-1500 2-1/2" preconnect in transverse hose bed above the pump panel, equipped with swivel to allow use from either side of the unit and is plumbed with a 2-1/2" Akron 8800 valve.  
Power shift PTO - Automatic transmission
- The power takeoff will be equipped with a power shift. An electric in-cab control for shifting the automatic transmission without special procedures will be provided.
- Pump engaged light in chassis cab to indicate pump shift has been completed  
OK to pump light in chassis cab to indicate that pump is engaged, transmission is in neutral (PTO Pump only with automatic transmission), and park brake is set.  
Class One "Captain" Governor/Throttle
- One (1)  
30-51-6600 This apparatus shall be equipped with a Class 1 CAPTAIN engine/pump governor/throttle system that is connected directly to the Electronic Control Module (ECM) mounted on the engine. The CAPTAIN is to operate as a pressure sensor (regulating) governor (PSG) eliminating any need for a relief valve on the discharge side of the pump.
- One (1)  
30-51-7000 A special preset feature shall permit a predetermined pressure or RPM to be set. The preset pressure or RPM will be displayed on the message display of the CAPTAIN. The preset shall be easily adjustable by the operator.  
Suction side relief V/V, Class One
- One (1)  
30-51-7700 A pre-set, spring-loaded 2-1/2" adjustable relief valve shall be installed to protect against excessive incoming pressure. The valve shall be adjustable from 75 to 250 PSI, shall be preset at 125 PSI, and shall attach directly to the pump suction manifold. The outlet shall be piped away from, but within sight of the pump operator and shall terminate with a 2-1/2" male adapter labelled "Intake pressure relief outlet - Do not cap". Shut-off valves or other means to disable the operation of the relief system shall not be permitted. Caps will not be installed in this line.  
Primer Hale oil less ESP with oil tank
1. The priming pump shall be a positive displacement rotary vane electric motor driven pump conforming to the requirements of NFPA 1901. The pump body shall be manufactured of heat treated anodized aluminum for wear and corrosion resistance.
  2. The pump shall be capable of producing 24 in (610 mm) Hg. Vacuum at 2000 ft (51 m)

## Lamoine Fire Dept

above sea level.

3. The electric motor shall be a 12 VDC or 24 VDC totally enclosed unit. While priming, the motor shall draw no more than 300 AMPS at 12 VDC and 150 AMPS at 24 VDC.

4. The priming pump shall require NO lubrication during operation. No lubricant tank required.

5. The priming pump shall be operated by a single control mounted on the pump operator panel.

One (1)  
30-51-8000

Heat exchanger w/ chassis

The upper chassis radiator hose shall be equipped with a high-efficiency tube bundle type closed circuit heat exchanger, which uses pump flow to reduce engine heat without contaminating engine coolant. The system shall be controlled by a 1/4-turn valve on the pump operator's panel. A drain shall be furnished in the engine cooler line.

One (1)  
30-52-1000

Master drain V/V, 12 port

A master drain valve will be provided. The valve will be located on the left side pump panel and connected in such a manner as to allow complete water drainage. Water will be drained below the apparatus body away from the pump operator.

One (1)  
40-00-0000

WATER AND FOAM TANKS

One (1)  
40-11-2000

Ultra Poly water tank

The tank shall have the capacity specified within this proposal complete with a Lifetime Warranty. The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. The purpose of the markings and notice is to inform department personnel who store, stock, or use the tank that the unit is under warranty. Markings may be brief but should include a short statement that a warranty exists, the substance of the warranty, its duration, and who to notify if the tank is found to be defective.

### CONSTRUCTION:

The UltraPolyTANK shall be constructed of 3/4" thick polypropylene sheet stock. This material shall be a non-corrosive stress relieved thermo-plastic, natural in color, and U.V. stabilized for maximum protection. The booster and/or foam tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity. The top of the booster tank is fitted with removable lifting eyes designed with a 3 to 1 safety factor to facilitate easy removability. The transverse swash partitions shall be manufactured of 1/2" polypropylene (natural in color) and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall be constructed of 1/2" polypropylene (natural in color) and extend from the floor of the tank through the cover to allow for positive welding and maximum integrity. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide

## Lamoine Fire Dept

maximum water flow. All swash partitions interlock with one another and are welded to each other as well as to the walls of the tank.

### FILL TOWER AND COVER:

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 8"x 8" outer perimeter. The tower shall be located in the left front corner of the tank unless otherwise specified by the purchaser. The tower shall have a 1/4" thick removable polypropylene screen and a polypropylene hinged-type cover. Inside the fill tower, approximately 4" down from the top, shall be fastened a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank, and shall be piped behind the rear wheels where specified by the purchaser in polypropylene, natural in color, and UV stabilized,

The tank cover shall be recessed 1/2" from the top of the tank and shall be welded to both sides and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two lifting dowels shall be drilled and tapped 1/2"x13" to accommodate the lifting eyes.

### SUMP:

There shall be one (1) sump standard per tank. The sump shall be constructed of 1/2" polypropylene and be located in the left front quarter of the tank, unless specified. On all tanks that require a front suction, a 4" schedule 40 polypropylene pipe shall be installed that will incorporate a dip tube from the front of the tank to the sump location. The sump shall have a minimum 4" NPT threaded outlet on the bottom for a drain plug. This shall be used as a combination clean-out and drain. All tanks shall have an antistirl plate located approximately 2" above the sump.

### OUTLETS:

There will be two (2) standard tank outlets: one for tank-to-pump suction line which shall be a minimum of 4" NPT coupling; and, one for a tank fill line which shall be a minimum of 2" pipe, NPT coupling. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1,000 G.P.M. The addition of rear suction fittings, nurse valve fittings, dump valves fittings, and through tank sleeves to accommodate rear discharge piping. All other outlets and inlets must meet all NFPA 1900 guidelines in effect at the time of manufacture.

### MOUNTING

The ultra poly water tank shall rest on the body subframe cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 500 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area. The tank must be isolated from the cross members through the use of hard rubber strips with, a minimum thickness and width dimension of .50 x 3"

## Lamoine Fire Dept

and a minimum Rockwell Hardness of 60 durometer. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both front and rear as well as side to side to prevent tank from shifting during vehicle operation. A picture frame type cradle mount shall be utilized with a minimum of 2" x 2" x .250 mild steel, stainless steel, or aluminum angle. Where aluminum or steel tubing and channel sub frames are incorporated in the body structure, the use of corner angles having a minimum dimension of 4" x 4" x .250 by 6" high are permitted for the purpose of capturing the tank. Although the tank is designed on a free floating suspension principle, it is required that the tank have adequate hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on top of the tank, half way between the front and the rear on each side of the tank. These stops can be constructed of steel, stainless steel or aluminum angle having minimum dimensions of 3" x 3" x .250 and shall be approximately 6 to 12 inches long. These brackets must incorporate a hard rubber isolating pad with a minimum thickness of .250 inch affixed on the underside of the angle. The angle should then be bolted to the body side walls of the vehicle while extending down to rest on the top outside edge of the upper side wall of the tank. Internal mounting block design and Hose beds floors must be so designed that the floor slat supports extend full width from side wall to side wall and are not permitted to drop off the edge of the tank or in any way come in contact with the individual covers where a puncture could occur. Hose floor loading must support up to 200 pounds per square foot and must be evenly distributed whenever possible. Other equipment such as generators, portable pumps, etc. must not be mounted directly to the tank top unless provisions have been designed into the ultra poly tank for that purpose. The tank shall be completely removable without disturbing or dismantling the apparatus structure.

One (1)  
40-11-2200 Water tank capacity certification (tank manufacturer)

A Ultra Poly Manufacturer's certificate specifying the capacity of the water (1800 )tank is provided by the water tank manufacturer.

One (1)  
40-11-6900 Tank capacity 1800 Gallons

Water tank capacity of 1800 US Gallons.

One (1)  
40-21-1000 4" tank to pump connection w electric actuator

One (1)  
40-22-0500 Body builder must install a 4" tank to pump valve w/ check to allow max floww/ 4" pipe  
2" tank fill connection

One (1)  
40-23-0500 tank fill from pump to tank to be female 2" npt  
1" water level gauge connection

One (1)  
40-30-0400 a 1 " npt connection for a tranducer style water level gauge sender shall be installed in the bottom of the  
tank  
3" plug in sump box

One (1)  
40-30-1000 A 3" plug is installed in the tank sump box cleanout.

Water Fill Box front left corner

The Water fill box for this tank is located in the front left corner of the tank.

## Lamoine Fire Dept

One (1)  
40-31-4500

10" rear Newton dump, painted steel

There shall be 10" x 10" Newton dump valve mounted at the center rear of the apparatus. This line shall permit dumping tank water to an external holding tank at a minimum rate of 1000 GPM.

One (1)  
40-31-5000

Newton dump - 36" telechute painted steel

A 36" telescoping chute is installed on the Newton dump.

One (1)  
40-31-5500

Electric operator for Newton dump

The Newton dump is equipped with an electric actuator for remote operation. The switch is located on the left side of the unit at the rear. Provisions are made to allow manual operation of the dump line in the event of an emergency.

One (1)  
40-31-5600

Rotating dump chute for Newton dump painted steel

A swivel connection is attached to the end of the dump line to allow dumping the tank to each side and to the rear.

One (1)  
40-31-5800

Support for rotating dump chute

Additional support is installed at the back of the body to carry the weight of the rotating dump chute.

One (1)  
40-31-8000

4" Storz rear Firemans Friend

A 4" line is located at the rear and connected directly to the booster tank. It is equipped with a "Fireman Friend" w/ check valve, 30deg 4" Storz adapter, bleeder valve.  
ELECTRICAL

One (1)  
50-00-0000

One (1)  
50-11-0500

Base electrical system

All electrical circuit feeder wiring supplied and installed by the apparatus manufacturer shall be stranded alloy copper conductors of a gauge rated to carry 125% of the maximum current for which the circuit is protected. Insulation shall be in accordance with SAE J1128, type SXL, and wired to SAE J1292, for such loading at the potential employed. Voltage drops in all wiring from the power source to the using device shall not exceed 10%. Overall covering of conductors shall be 280 degrees F. minimum flame retardant loom or braid. All connections shall be made with lugs or terminals mechanically secured to the conductors. Wiring shall be thoroughly secured in place and suitable protected against heat, oil and physical damage. All body wiring is colour coded and marked every 3" as to function. All circuits are protected by autoreset circuit breakers. The power distribution panel is located in the pump compartment or behind the back wall of the front side compartment depending on the muffler location. Circuits are provided with properly rated low voltage overcurrent protective breakers. Such circuit breakers are readily accessible and protected against excessive heat, physical damage and water spray. Switches, relays, terminals and connectors have a direct current rating of 125% of maximum current for which the circuit is protected. All wiring is done to NFPA standards and SAE standards and comply with CMVSS regulations.

One (1)  
50-11-0600

Warning Light by Federal Certification

## Lamoine Fire Dept

Certification from the warning light manufacturer is provided to confirm that the lighting system meets current NFPA 1901 standards.

One (1)  
50-11-0600

Warning Light Certification

Certification from the warning light manufacturer is provided to confirm that the lighting system meets current NFPA 1901 standards.

One (1)  
50-11-0700

Low Voltage Electrical system test

The low voltage electrical system shall be tested as outlined in the appropriate standard - includes reserve capacity test, alternator performance test, and low voltage alarm test.

One (1)  
50-11-0800

Low Voltage Electrical System Documents

One (1)  
50-11-0900

Rocker switch panel with master warning switch

A rocker switch panel is installed with a Master switch to control all emergency lighting to comply with NFPA 1901 requirements.

One (1)  
50-11-1400

Federal PA300 100 watt siren

A 100 watt siren shall be mounted in the cab with the following functions supported:

-yelp, wail, and Priority tone

-PA operation, microphone included

-manual operation of siren

-capability of broadcasting radio transmissions through the siren speaker

A rocker switch panel is installed with a Master switch to control all emergency lighting to comply with NFPA 1901 requirements.

One (1)  
50-11-1600

Siren speaker, 100 watt, in front bumper

A 100 watt speaker is mounted behind the chassis grille.

One (1)  
50-11-2500

Siren to be to be pedestal mounted

One (1)  
50-11-5800

Federal JET SOLARIS LED light bar jlx5401

This unit shall be equipped with a full width light bar mounted on the cab, which shall be reinforced to carry the weight. The light bar includes LED light heads and red lens. These lights

## Lamoine Fire Dept

shall all be controlled from the cab. All lights are enabled in RESPONSE mode with two light heads disabled in SCENE mode.

One (1)  
50-11-8900

Rear microescape- me2qlpc 1 red blue led

This unit shall be equipped with two auxiliary beacons mounted at the rear of the unit at the top of the rear beaver tails. The right side beacon is red, the left side beacon is blue

One (1)  
50-12-5000

Front LED pr red FederalQuadraflare ql73sfc rc

This unit shall be equipped with red flashing LED lights at the front of the vehicle

One (1)  
50-12-5100

Rear LED (pr)-red Federal ql73sfc rc

This unit shall be equipped with red flashing LED lights at the rear of the unit.

One (1)  
50-12-5200

Front side inter lts (pr)-red LED Federal ql73xf

This unit shall be equipped with flashing red LED lights in the side of the hood (intersection lights).

One (1)  
50-12-5300

Body side inter lts (pr)-red LED Federal ql73xf

This unit shall be equipped with flashing red LED lights in the side of the rear fender wells (intersection lights).

One (1)  
50-21-1500

Rear floods (pr)-Unity w/ reverse

This unit shall be equipped with two chrome plated flood lights mounted at the rear of the unit on top of the beaver tails.

One (1)  
50-21-5100

Compartment lighting - LED tube lights in each compartment

Vertical tube type compartment lights will be provided in each enclosed compartment, and will be controlled automatically when compartment door is opened.

One (1)  
50-21-5500

Door Ajar warning light

Warning Light is installed to indicate when a compartment or chassis door is open.

One (1)  
50-21-8000

Step lights for body steps

Step lights are installed to light all body work surfaces, steps, and walkways.

One (1)  
50-21-8200

Step lights for chassis steps

Step lights are installed to light all chassis entry steps.

One (1)  
50-21-8500

D.O.T. Clearance lts and reflectors

Clearance, marker, and license plate lights, along with reflectors will be mounted in accordance with federal regulations. Rear mounted marker lights shall be recessed mounted in the rear step for protection from breakage.

One (1)  
50-22-0600

Federal tail/brake-turn-backup module LED

A module including a red tail/brake light, an amber turn signal and a clear back up light in a

## Lamoine Fire Dept

- chrome housing is installed at the rear of the unit on each side.  
Federal Scene lights ql97hscene
- Six (6)  
50-31-6000
- Scene light(s) will be mounted as specified at the preconstruction conference.  
Ground lighting - NFPA requirement
- One (1)  
50-31-6500
- Lighting is installed under rear step, chassis steps, and under pump panel steps for greater visibility at night.
- One (1)  
60-00-0000
- BODY
- One (1)  
60-10-1400
- Single Axle Ultra Poly Tanker Body 1800g
- The body of this unit is designed to ensure correct load distribution on the chassis and is constructed of custom polypropylene with a 3/4" floor used for sides, 1/2" walls, 1/2" sides compartments, and exterior panels. The Poly body is mounted on a subframe of min. 3" x 3" x 1/4" steel square tubing, and is attached to the frame of the truck by a spring loaded mounting system and UHMW plastic sills which reduce flexing in the tank and body.
- Full fender liners are installed.
- The compartments are constructed as part of the poly body. The use of 1/2" poly plate for compartment sides, floors and walls, and allows a compartment interior with no visible welds. Each compartment is equipped with vents in the back and drain holes in the floor. All compartments are of the "Sweep out" design for ease of cleaning. Extruded aluminum drip molding is installed over and at the front of the compartment doors, and an automotive bulb type weatherstrip is installed completely around the door opening in a groove in the door frame extrusion. This ensures a high degree of weather resistance.
- DRIP MOLDING:**  
Compartment tops over all side compartments will have a flange formed out to provide protection against water runoff.  
No "beavertail" rear step supports
- One (1)  
60-10-4100
- No tapered "beavertail" rear step supports are necessary.
- One (1)  
60-10-4600
- Painted fender surround
- The vertical trim around each rear wheel is painted to match the rest of the body.
- One (1)  
60-10-4700
- Integral aluminum fender trim
- Extruded aluminum trim is installed around each rear wheel and is an integral part of the body.
- One (1)  
60-10-5400
- Diamondback 19" rear step/pumphouse steps
- The running boards will be made of open strut aluminum with non slip surface. Each step will be

## Lamoine Fire Dept

rigidly reinforced with a heavy duty support structure. Running boards will not form any part of compartment design.

Rear step will be 19 inches deep, made of open strut aluminum with non slip surface, and rigidly reinforced.

One (1)  
60-10-6000

Extruded rub rail

An extruded rub rail extends 3/4" beyond the body on each side. It is polished aluminum and is an integral part of the body.

One (1)  
60-11-0100

Front left side compartment to top of wheel well

Compartments are installed on the left side of the unit ahead of the rear wheels to the height of the wheel well opening.

One (1)  
60-11-0140

No second front left side compartment

One (1)  
60-11-0500

Front right side compartment to top of wheel well

Compartments are installed on the right side of the unit ahead of the rear wheels to the height of the wheel well opening.

One (1)  
60-11-0540

No second front right side compartment

One (1)  
60-11-1700

No rear left side compartments

Compartments are not installed on left side of the body behind the rear wheels.

One (1)  
60-11-1800

No rear right side compartments

Compartments are not installed on right side of the body behind the rear wheels.

One (1)  
60-11-3100

No rear compartment

One (1)  
60-11-4500

No compartments are installed at the rear of the apparatus body  
Flush mount tandem stainless fenderettes

Two (2)  
60-11-5500

Body builder to install stainless steel polished axle fenderettes  
Amdor Rollup doors

The doors on this unit are Amdor Roll Up Shutters, custom fitted to the compartment door opening. Finish is natural aluminum.

One (1)  
60-31-4100

Extruded aluminum handrails

All railing will be 1-1/4" outer diameter, extruded aluminum non slip rib type tubing. Two (2) vertical rails will be mounted on the rear edge of the beavertails, one (1) each side. One (1) handrail will be installed below the level of the hosebed. The handrail will be the full width of the rear sheet between the beavertails.

One (1)  
60-31-6500

Compartment matting-Turtle tile

## Lamoine Fire Dept

- Body Builder to install Turtle Tile compartment floor matting will be installed in each enclosed compartment.
- One (1)  
60-31-8600 Sliding tray (ea) - 400 pound capacity - standard
- Sliding tray(s) equipped with 400 pound capacity sliding hardware and latch to hold in the closed position are installed as directed by the Fire Department at preconstruction meeting. Steps at the front and rear fo the body
- Two (2)  
60-32-3500
- Body builder to install steps at the front and rear of the body per customer spec's. steps at the rear for the body
- One (1)  
60-32-7500
- aluminum step at the rear of the body will be 8" wide X 16" long  
Paint exterior - Imron Elite
- One (1)  
60-33-0000
- All compartment doors, removable components, flush mounted lights, drip moldings, accessories and other equipment shall be mounted on the body prior to painting, then removed for final finishing to assure paint has been applied to surfaces under all equipment and components. All exterior surfaces of the body except tread plate and polished stainless steel are painted to prevent corrosion. The body is buffed, primed with acid etching primer, epoxy primed, and painted with 3 full coats of DUPONT ELITEpolyurethane enamel.
- One (1)  
60-33-0200 Undercoat vehicle with rust protection
- Entire cab and body is treated with rust protection.
- One (1)  
60-33-0500 Paint chassis wheels job colour with silver trim
- The chassis tires are masked and the wheels are painted the same colour as the body. A silver highlight stripe is painted around the rim next to the tire.
- One (1)  
60-33-1000 Paint pump and plumbing job colour
- The pump and plumbing area are painted to match the body colour.  
compartment interiors are Gray Trunk Kote
- One (1)  
60-33-1500
- The interior of the aluminum compartments is buffed to remove scratches and provide a finished surface.then sprayed with gray trunk coat  
Lettering - By the Fire Dept
- One (1)  
60-33-2200
- Lettering consisting of up to 80 letters of a size up to 3" tall shall be applied according to Fire Department requirements. The lettering shall be vinyl in the colour specified by the Fire Department and shall consist of one colour letter with two colours of shadow.  
Reflective stripe - 1" - 4" -1"
- One (1)  
60-33-3200
- A one x four X one inch high white Scotchlite stripe will be provided with a one inch white stripe applied above and below the four inch stripe. The stripes will be applied on a minimum of 60 percent of each side of the unit, 60 percent on the rear of the unit and 40 percent on the front of the unit.
- One (1)  
60-33-3500 Allison Auto Transmission PTO Hot shift

# Lamoine Fire Dept

A hot shift Allison auto transmission PTO will be installed to drive the Hale Fire Pump, the builder to install a telltale flashing pilot light to indicate pump in gear.

One (1)  
60-33-3600

Reflective stripe - inside entry doors

A minimum of 96 square inches of white reflective Scotchlite vinyl will be provided on the inside of each entry door to the vehicle.

One (1)  
60-33-4600

Aluminum cover over crosslays - with end tarps

A hinged aluminum crosslay hosebed cover will be provided over the crosslays. Small tarps with velcro straps to enclose each end are provided.

Three (3)  
60-40-5500

Suction hose tube thru the tank - **DRIVERS SIDE.**

Provision is made to slide the suction hose into a tube from the rear of the unit on the body

One (1)  
60-41-6000

Thru the tank portable tank rack

An enclosed portable tank mounting system will be installed on the <sup>PASSENGER</sup> SIDE of the truck. The lights and reflective tape are installed at front and rear to indicate any areas that protrude beyond the body.

One (1)  
60-41-6100

Painted rear suction door

Aluminum tread plate is installed on the outside of the portable tank rack. With an aluminum tread plate door

One (1)  
60-41-7100

Painted rear foldable tank door

Aluminum tread plate is installed on the side of the body behind the portable tank rack to prevent damage to painted surfaces from the portable tank. With a aluminum tread plate door  
INSTRUMENTATION

One (1)  
70-00-0000

Warning Label on Pump Operator's Panel

One (1)  
70-11-0000

A warning label will be installed on the Pump Operator's Panel stating:  
**WARNING:**

Death or serious injury might occur if proper operating procedures are not followed. The pump operator, as well as individuals connecting supply or discharge hoses to the apparatus, must be familiar with the operator's manual, water hydraulics hazards, and component limitations.

One (1)  
70-11-0500

Side mount instrument panel

The pump operator's control panel will be located on the left side of the apparatus. Both side pump panels will be completely removable and designed for easy access and servicing. A pump compartment access door is installed on the right side of the unit for access to the pump compartment and the electrical panel.

## Lamoine Fire Dept

- One (1)  
70-11-1500      Stainless steel instrument panels
- The instrument and pump panels on this unit are fabricated from 14 gauge 304 stainless steel with brushed finish.
- One (1)  
70-11-3200      Colour coded tags
- Identification plates will be provided for all gauges, controls, connections, switches, inlets and outlets. Plates will be engraved in color coded polymer material for durability and accurate identification of controls.
- One (1)  
70-11-4500      Diamondback grip type panel hood step right side
- The right side pump panel will be illuminated by clear lens lights under an aluminum gripstrut type step. The step will be full width of the panel, and will be positioned to cover the lights and prevent glare on operator.
- One (1)  
70-11-4600      Diamondback grip type panel hood step left side
- The left side pump panel will be illuminated by clear lens lights under an aluminum gripstrut type step. The step will be full width of the panel, and will be positioned to cover the lights and prevent glare on operator.
- One (1)  
70-11-5000      Standard cover over rear top of pump house - no storage
- The area behind the crosslay hose bed (if equipped) is covered with tread plate.
- One (1)  
70-11-5500      Right side pump access panel stainless
- An access panel to the pump compartment is installed on the right side of the pump house.
- One (1)  
70-11-7500      Heat pan-aluminum
- A pump heat pan fabricated from 1/8" aluminum will be provided on the underside of the pump enclosure to act as a supplementary heating system by entrapping chassis exhaust heat during low temperature pumping operations. This pan will be attached with spring loaded pins for easy removal without tools for servicing and in warm weather.
- Two (2)  
70-11-8000      4 1/2" compound Gauge
- A 30,000 BTU hot water heater is installed in the pump compartment with fan controls at the pump panel.
- Three (3)  
70-20-2000      2-1/2" pressure gauge - PSI only
- Pressure gauges, 0-600 psi and 2-1/2" diameter, are installed on the pump operator's panel, one plumbed to each discharge.
- One (1)  
70-20-2500      Primer control
- A control is mounted on the pump panel to operate the primer pump.
- One (1)  
Class One Governor Control

## Lamoine Fire Dept

- 70-20-3100 A Class One Governor control is installed on the pump operator's panel to control pump pressure and engine speed.
- One (1)  
70-20-3510 Innov. controls H2o pump panel
- An Innovative Controls water level gauge is installed on the pump panel with four indicator lights showing quarter, half, three quarter and full tank levels. The sender has no moving parts. An additional readout is installed at the rear of the body.
- One (1)  
70-20-3600 water level gauge readout @ rear Panel
- A remote water level readout is installed on the rear of the apparatus body with four indicator lights showing quarter, half, three quarter and full tank levels. An interface to the water level gauge is included.
- One (1)  
70-20-7500 Heat exchanger control valve
- A quarter turn valve to allow flow of water through the engine heat exchanger is mounted on the pump panel.
- One (1)  
70-21-0100 Class One ENFO III engine monitor
- A Class One Enfo III engine monitor is installed providing the Pump operator the following information in a single unit:
- Engine RPM Display
  - System Voltage Display and Alarm
  - Engine Oil Pressure Display and Alarm
  - Engine Temperature Display and Alarm
- PTO Hourmeter
- One (1)  
70-21-2100
- An electric hourmeter is to be mounted on the pump panel, wired to show pump hours.
- One (1)  
70-21-5500 Panel readout for Battery Conditioner
- A readout for the battery conditioner is installed on the pump panel
- One (1)  
71-21-3100 Transmission warning light (automatic transmission)
- A transmission warning light is mounted on the pump panel by the body builder.
- One (1)  
80-11-0000 ACCESSORIES
- The following accessories and mounting brackets will be installed on this unit:
- Two (2)  
80-11-5000 6" x 10' lightweight suction hose (ea)
- One (1)  
80-12-4500 Body Builder to supply ( 2 ) 6" X 10' lightweight PVC suction hose with threaded pyrolite fittings  
6" low level strainer with 1-1/2" venturi connection
- Two (2)  
80-18-0500 Body Builder to supply a 6" low level strainer, threaded NH pyrolite  
SCBA bracket with strap
- Body Builder to supply 2 SCBA mounting bracket with retaining strap - compartment mount only

