

# **Heiman Stock CP230**

## **BID SPECIFICATIONS**

### **FOR**

## **ROSENBAUER CUSTOM FIRE APPARATUS**

One (1)  
00-00-1499

### **OVERALL HEIGHT**

An overall height restriction has not been specified for this apparatus.

One (1)  
00-00-1509

### **OVERALL LENGTH**

An overall length restriction has not been specified for this apparatus.

One (1)  
00-00-1519

### **OVERALL WIDTH**

An overall width restriction has not been specified for this apparatus.

One (1)  
00-00-1529

### **WHEELBASE**

A wheelbase restriction has not been specified for this apparatus.

One (1)  
00-00-1539

### **ANGLE OF APPROACH**

The angle of approach for the apparatus shall not be less than eight (8) degrees as specified by the current edition of the NFPA 1901 Guideline.

One (1)  
00-00-1549

### **ANGLE OF DEPARTURE**

The angle of departure for the apparatus shall not be less than eight (8) degrees as specified by the current edition of the NFPA 1901 Guideline.

One (1)  
00-00-1610

### **NFPA PUMPER EQUIPMENT ALLOWANCE**

In compliance with the current NFPA 1901 guidelines, the apparatus shall be engineered to provide an allow of 2500 pounds of fire department provided loose equipment.

One (1)  
00-00-3220

### **CONTRACT CHANGE NOTICE**

The quoted delivery time is based upon our receipt of the specified materials required to produce the apparatus in a timely manner. "Delivery" means the date company is prepared to make physical possession of vehicle available to the customer.

The Company shall not be responsible nor deemed to be in default on account of delays in performance due to causes which are beyond the Company's control which make the Company's performance impracticable, including but not limited to civil wars, insurrections, strikes, riots,

fires, storms, floods, other acts of nature, explosions, earthquakes, accidents, any act of government, delays in transportation, inability to obtain necessary labor supplies or manufacturing facilities, allocation regulations or orders affecting materials, equipment, facilities or completed products, failure to obtain any required license or certificates, acts of God or the public enemy or terrorism, failure of transportation, pandemics, epidemics, quarantine restrictions, failure of vendors (due to causes similar to those within the scope of this clause) to perform their contracts or labor troubles causing cessation, slowdown, or interruption of work.

After execution and acceptance of this Purchase Process, the Buyer may request that the Company incorporate a change to the Products or the Specifications for the Products by delivering a Change Order to the Company; provided, however, that any such Change Order must be in writing and include a description of the proposed change sufficient to permit the Company to evaluate the feasibility of such Change Order. Within seven (7) working days of receipt of a Change Order, the Company will inform the Buyer in writing of the feasibility of the Change Order, the earliest possible implementation date for the Change Order, of any increase or decrease in the Purchase Price resulting from such Change Order, and of any effect on production scheduling or delivery resulting from such Change Order. The Company shall not be liable to the Buyer for any delay in performance or delivery arising from any such Change Order. Purchase Price may be modified only by mutual written agreement of the Parties because of changes to the Apparatus required or requested by the Buyer during the construction process pursuant to Appendix C, Change Order Policy. Any changes in the Purchase Price resulting from changes to the Apparatus required or requested by the Buyer during the construction process shall be stated in the Change Order signed by both parties. Additional Changes: If various state or federal regulatory agencies (e.g., NFPA, DOT, EPA) require changes to the specification and/or the product that result in a cost increase to comply therewith this cost will be added to the Purchase Price to be paid by the customer.

One (1)  
01-06-0500

### **CENTER OF GRAVITY**

The apparatus, prior to acceptance, will be required to meet the vehicle stability of the applicable NFPA Automotive Fire Apparatus Standard.

A calculated center of gravity shall be provided. The calculated or measured center of gravity (CG) shall be no higher than 80-percent of the rear axle track width. If so, a tilt table test at the apparatus body builder's facility or Electronic Stability Control (ESC) must be provided on the chassis meeting the requirement of the NFPA 1901 Guideline.

One (1)  
01-07-0060

### **ENGINEERING BLUEPRINTS**

**ROSENBAUER** has submitted "proposal" blueprints which are "representative" of the vehicle being proposed and these have been generated on computer-aided-design (CAD) equipment.

The blueprints are provided as follows:

Sheet No. 1:

- Left side exterior view
- Right side exterior view
- Rear exterior view

**ROSENBAUER** shall provide construction drawings for approval prior to actual construction of the vehicle.

The design of the equipment is in accordance with the best engineering practices. The equipment design and accessory installation shall permit accessibility for use, maintenance and service. All components and assemblies shall be free of hazardous protrusions, sharp edges, cracks or other elements, which might cause injury to personnel or equipment.

All oil, hydraulic, and air tubing lines and electrical wiring shall be located in protective positions properly attached to the frame or body structure and shall have protective loom or grommets at each point where they pass through structural members, except where a through-frame connector is necessary.

Parts and components will be located or positioned for rapid and simple inspection and recognition of excessive wear or potential failure. Whenever functional layout of operating components determines that physical or visual interference between items cannot be avoided, the item predicted to require the most maintenance shall be located for best accessibility.

One (1)  
01-07-1100

### **CHANGE ORDERS**

To ensure the proper engineering and construction of the purchaser's custom fire apparatus in a timely manner, the contractor shall consider the order final and complete after any changes made during the pre-construction conference are mutually approved. Change orders requested after the pre-construction conference are discouraged. It shall be understood and agreed that any changes, if approved, after the order has been released to Engineering, shall constitute a valid cause for production delay and without penalty to the contractor.

One (1)  
01-16-0100

### **BODY WARRANTY**

The manufacturer shall provide a one (1) year body warranty. The manufacturer shall supply details of their warranty information with their bid submission.

One (1)  
01-19-0250

### **ALUMINUM BODY WARRANTY - FIVE YEAR**

Rosenbauer America, LLC warrants to the original purchaser only, that the all-aluminum body, fabricated by Rosenbauer America, LLC, under normal use and with reasonable maintenance, be structurally sound and will remain free from corrosion perforation for a period of FIVE (5) years.

This warranty does not apply to the following items that are covered by a separate warranty: paint finish, hardware, moldings, and other accessories attached to this body. In addition, this warranty does not apply to any part or accessory manufactured by others and attached to this body.

ROSENBAUER AMERICA, LLC MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE ALUMINUM BODY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND HEREBY DISCLAIMED.

Rosenbauer America, LLC will replace without charge, repair or make a fair allowance for any defect in material or workmanship demonstrated to its satisfaction to have existed at the time of delivery or not due to misuse, negligence, or accident. If Rosenbauer America, LLC elects to repair this body, the extent of such repair shall be determined solely by Rosenbauer America, LLC, and shall be performed solely at the Rosenbauer America, LLC factory, or at an approved facility. The expense of any transportation to or from such repair facility shall be borne by the purchaser and is not an item covered under this warranty.

Rosenbauer America, LLC will not be liable for damages and under no circumstances will its liability exceed the price for a defective body. The remedies set forth herein are exclusive and in substitution for all other remedies to which the purchaser would otherwise be entitled.

Rosenbauer America, LLC will be given a reasonable opportunity to investigate all claims. The purchaser must commence any action arising out of, based upon or relating to agreement or the breach hereof, within twelve months from the date the cause of the action occurred.

Note: *Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.*

One (1)  
01-19-2800

#### **GALVANIZED SUBFRAME WARRANTY**

Subject to the provisions, limitations and conditions set forth in this warranty, Rosenbauer America, LLC (hereby referred to as "seller"), hereby warrants to each original purchaser only that each new hot dip galvanized body subframe (exclusive of paint finish and hardware) is structurally sound and free of all structural defects of both material and workmanship and further warrants that it will maintain such structural integrity for the duration of ownership by the original purchaser. This warranty terminates upon transfer of possession or ownership by the original purchaser.

This warranty is conditioned upon normal use and reasonable maintenance of such subframe; prompt written notice of all defects to seller or one of the seller's then authorized dealers in the area; no repair or additions there to except by seller or authorized by it; said defect not resulting from misuse, negligence, accident, remount, overloading beyond applicable weight rating by customer or third parties. If any such conditions are not complied with, this warranty shall become void and unenforceable.

Should repairs become necessary under the terms or the warranty, the extent of that repair shall be determined solely by the seller and shall be performed solely at Rosenbauer America, LLC or a repair facility designated by the seller. The expense of any transportation to or from such repair facility shall be that of the purchaser and is not an item covered by this warranty.

Seller reserves the unrestricted right at any time from time to time to make changes in the design of and/or improvements on its products without thereby imposing any obligation on itself to make corresponding changes or improvements in or on its products theretofore manufactured.

**EXCLUSIONS AND LIMITATIONS: THIS MANUFACTURER'S WARRANTY IS PROVIDED IN PLACE OF ANY AND ALL OTHER REPRESENTATIONS OR IMPLIED WARRANTIES. NO PERSON IS AUTHORIZED TO MAKE ANY REPRESENTATIONS OR WARRANTY ON BEHALF OF ROSENBAUER AMERICA, LLC OR ANY OF ITS DISTRIBUTORS OTHER THAN SET FORTH IN THIS MANUFACTURER'S WARRANTY. YOUR RIGHT TO SERVICE AND REPLACEMENT OF PARTS ON THE TERMS EXPRESSLY SET FORTH HERIN ARE YOUR EXCLUSIVE REMEDIES AND NEITHER THE MANUFACTURER NOR ANY OF ITS DISTRIBUTORS SHALL BE LIABLE FOR DAMAGES, WHETHER ORDINARY, INCIDENTAL OR CONSEQUENTIAL.**

*Note: Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.*

One (1)  
01-17-0700

**PUMP WARRANTY**

The fire pump manufacturer shall provide a seven (7) year warranty. The manufacturer shall supply details of their warranty information with their bid submission.

One (1)  
01-17-1050

**STAINLESS STEEL PLUMBING WARRANTY**

The manufacturer shall provide a ten (10) year warranty on the stainless steel plumbing components and installation. The manufacturer shall supply details of their warranty information with their bid submission.

One (1)  
01-18-0050

**FOAM TANK WARRANTY**

The manufacturer shall provide a warranty for the G3 foam tank. The manufacturer shall supply details of their warranty information with their bid submission.

One (1)  
01-18-0900

**WATER TANK WARRANTY**

The manufacturer shall provide a warranty for the G3 water tank. The manufacturer shall supply details of their warranty information with their bid submission.

One (1)  
01-33-3100

## **BODY MANUAL - PRINTED**

Rosenbauer shall provide with the vehicle upon delivery, one (1) complete delivery manual. This manual shall be in a notebook type binder, with reference tabs for each section of the vehicle.

Within each section shall be:

- Individual component manufacturer instruction and parts manuals
- Warranty forms for the body
- Warranty forms for all major components
- Warranty instructions and format to be used in compliance with warranty obligations
- Wiring diagrams
- Installation instruction and drawings for major parts
- Visual graphics and electronic photos for the installation of major parts
- Necessary normal routine service forms, publications and components of the body portion of the apparatus
- Technical publications for training and instruction on major body components
- Warning and safety related notices for personnel protection
- Cab and chassis manuals on parts, service and maintenance shall be provided

One (1)  
02-90-1200

## **FREIGHTLINER CHASSIS**

A Freightliner 4-door chassis per the attached specifications shall be furnished:

One (1)  
50-03-1000

## **LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS**

The electrical system shall include all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The electrical equipment installed by the apparatus manufacturer shall conform to current automotive electrical system standards, the latest Federal DOT standards, and the requirements of the applicable NFPA standards.

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

The wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection and shall be installed in accordance with the device manufacturer's instructions. Electrical connections shall be with mechanical type fasteners and large rubber grommets where wiring passes through metal panels.

The wiring between the cab and body shall be joined using Deutsche type connectors or an enclosed in a terminal junction panel area. This system will permit body removal with minimal impact on the apparatus electrical system. All connections shall be crimp-type with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather-resistant connectors shall be provided throughout to ensure the integrity of the electrical system.

Any electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. In addition, the main body junction panel shall house the automatic reset breakers and relays where required.

There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless they are enclosed in a junction box or covered with a removable electrical panel. The wiring shall be secured in place and protected against heat, liquid contaminants and damage. Wiring shall be uniquely identified every three-inches (3") by color coding or permanent marking with a circuit function code and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA #1901 standards.

The electrical circuits shall be provided with low voltage overcurrent protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The overcurrent protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.

The electrical system shall include the following:

- Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body.
- The electrical wiring shall be harnessed or be placed in a protective loom.
- Holes made in the roof shall be caulked with silicone. Large fender washers shall be used when fastening equipment to the underside of the cab roof.
- Any electrical component that is installed in an exposed area shall be mounted in a manner that will not allow moisture to accumulate in it.
- A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.
- All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.

The warning lights shall be switched in the chassis cab with labeled switches in an accessible location. Individual rocker switches shall be provided only for warning lights provided over the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the operator. The warning light switches shall be of the rocker type. For easy nighttime operation,



an integral indicator light shall be provided to indicate when the circuit is energized. All switches shall be appropriately identified as to their function.

A single warning light switch shall activate all required warning lights. This switch will allow the vehicle to respond to an emergency and "call for the right of way". When the parking brake is applied, a "blocking right of way" system shall automatically activate per requirements of the applicable NFPA standards. All "clear" warning lights shall be automatically turned off upon application of the parking brake.

### NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM

The apparatus shall be electrically tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of the applicable NFPA standards. The following minimum testing shall be completed by the apparatus manufacturer:

#### 1. Reserve capacity test:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a failed test.

#### 2. Alternator performance test at idle:

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

#### 3. Alternator performance test at full load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system is permitted during this test. However, if an alarm sounds due to excessive battery discharge, as detected by the system requirements in the NFPA standards, or a system voltage of less than 11.7 volts dc for more than 120 seconds is present, the test has failed.

#### 4. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery

discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts dc for a 12 volt system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

#### NFPA REQUIRED DOCUMENTATION

The following documentation shall be provided on delivery of the apparatus:

- a. Documentation of the electrical system performance tests required above.
- b. A written load analysis, including:
  1. The nameplate rating of the alternator.
  2. The alternator rating under the conditions.
  3. Each specified component load.
  4. Individual intermittent loads.

One (1)  
50-05-1510

#### WEATHER RESISTANT ELECTRICAL JUNCTION BOX

The electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. In addition, the main body junction panel shall house the automatic reset breakers and relays where required. The main body junction panel shall be located in the pump compartment.

One (1)  
50-12-1120

#### **ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL – THERMAL COATED**

An electrical console shall be constructed of .125" black LineX coated smooth aluminum material, and mounted in the cab of the truck chassis. Console shall be designed and installed between the driver and passenger seats. The top face of the console shall be designed as the switch panel for all emergency light switches. The switch panel shall be hinged for easy access to the switch connections.

All emergency light switches shall be lighted, rocker style. Switches shall be internally lit when the switch circuit is in the on position. A plug-in identification label is to be provided and installed adjacent to each rocker switch with backlighting provided behind the label.

#### SWITCHES

A rocker style internally lighted switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights. The emergency lights shall be activated by a single "MASTER SWITCH" on the electrical console.

One (1)  
50-15-1100

## **BATTERY SYSTEM**

The battery system shall be supplied with the chassis.

One (1)  
50-15-3100

## **MASTER ELECTRIC SWITCH**

A battery disconnect switch shall be located conveniently to the driver of the apparatus. The switch shall disconnect the 12 volt power supply from the battery system.

One (1)  
50-15-7700

## **BATTERY CHARGER AND AIR COMPRESSOR**

A Kussmaul Pump Plus 1000 PLC model #51-21-1100 battery charger and air compressor system shall be installed. The 12 volt compressor system shall be designed to maintain the air pressure in the chassis brake system whenever the pressure drops below a predetermined level.

The battery charger shall be supplied from the 12 volt shore power receptacle and be a fully automatic high output charging system. The unit shall be mounted in a clean dry area and will be accessible for service and/or maintenance.

One (1)  
50-20-1610

## **AUTO-EJECT**

A Kussmaul "Super Auto-Eject" 20-amp automatic disconnect device shall be provided and installed on the 110-volt shoreline connection. The device shall be complete with weatherproof cover and matching plug with bar graph display, part number 091-55-234, incorporated into the cover. The Auto-Eject shall be activated by the chassis starter switch to disconnect the plug. The Super Auto-Eject shall be completely sealed to prevent contamination of the mechanism by inclement weather and road conditions. The Super Auto-Eject shall have an internal switch to open and close the AC circuit after the mating connector is inserted and before the connector is removed.

One (1)  
50-20-1124

## **SHORE POWER PLUG**

The shore power plug shall be located in the step area below the left front cab door of the commercial chassis.

One (1)  
51-00-1700

## **12 VOLT POWER SOURCE**

One (1) 12 volt power and ground connection rated at 30 amps shall be provided on the apparatus for the installation of a mobile two-way radio.

--install a labeled loop of wire in the center console for radio installation

One (1)  
51-00-4000

The power source shall be run through the chassis master battery switch and shall be deactivated when the master switch is in the "OFF" position.

One (1)  
51-05-6400

### **PUMP ENCLOSURE LIGHTS**

One (1) LED work light shall be provided in the pump enclosure.

One (1)  
51-05-9000

The control switch shall be mounted on the light head.

One (1)  
52-01-1200

### **BACK-UP ALARM**

An automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.

One (1)  
52-02-4000

### **BACKUP CAMERA SYSTEM**

A Zone Defense camera system EZ-ZD.323.1, complete with an 7" LCD display monitor, shall be supplied. The camera shall activate when the transmission is placed in reverse.

One (1)  
52-15-1200

### **RADIO ANTENNA BASE**

One (1) radio antenna base shall be supplied and installed on the apparatus, the antenna coax terminating in the cab. The location shall be determined by the customer.

One (1)  
53-01-1200

### **MARKER LIGHTS**

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements.

One (1)  
53-02-1250

### **LICENSE PLATE BRACKET**

A Cast Products license plate bracket, model LP0005-1-C shall be provided at the rear of the apparatus. The bracket shall have a polished finish and LED light.

One (1)  
53-03-2750

### **TAIL LIGHTS**

One (1) pair of Whelen M62BTT LED tail/brake lights shall be provided. The rectangular 4"x6" lights shall be red.

One (1)  
53-04-2750

### **TURN SIGNALS**

One (1) pair of Whelen M62T LED turn signals with populated sequential chevron arrow shall be provided.

One (1)  
53-06-3550

### **BACKUP LIGHTS**

One (1) pair of Whelen Series M62BU LED backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens color shall be clear.

One (1)  
53-07-1210

### **FOUR LIGHT HOUSING**

One (1) pair of chrome plated tail light housings shall be supplied. Each housing shall be designed to hold four (4) Whelen M6 rear lights located at the lower rear corners of the body.

One (1)  
53-05-1800

### **MID BODY LED TURN SIGNALS**

One (1) pair of mid body LED turn signals shall be provided. The location of the turn lights shall be at mid-body near the rear wheel axle.

One (1)  
54-02-1500

### **CAB GROUND LIGHTS**

Four (4) LED ground lights shall be installed on the chassis cab, one under each cab door.

One (1)  
54-02-2340

### **CAB STEP LIGHTS**

There shall be LED cab step lights supplied below the chassis cab doors. The lights shall be mounted below the cab doors and illuminate the chassis cab steps. There shall be four (4) LED lights located on each side of the chassis cab.

One (1)  
54-03-1200

### **PUMP PANEL GROUND LIGHTS**

Two (2) LED ground lights shall be installed under the pump panel running boards. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.

One (1)  
54-03-1600

### **REAR STEP GROUND LIGHTS**

Two (2) LED ground lights shall be installed under rear step of the apparatus.

One (1)  
54-04-1999

The ground lights shall automatically activate when the parking brake is applied.

Two (2)

54-10-1300

### **STEP LIGHT**

Two (2) LED step light(s) with clear lens shall be installed.

Two (2)  
54-10-1450

### **REAR TAILBOARD LIGHTS**

Two (2) LED step lights with clear lens shall be installed to illuminate the step surfaces at the rear of the apparatus body.

One (1)  
54-11-2100

The step/walkway light switch shall be installed and wired to the parking brake.

One (1)  
54-12-1918

### **DECK LIGHTS - REAR**

The deck lights shall be installed at the rear of the hose bed.

One (1)  
54-12-1320

### **DECK LIGHTS**

One (1) 12 volt Code 3 Model CW2450 spotlight and one (1) 12 volt Code 3 Model CW2451 floodlight, each with nine (9) LED's, shall be installed. The lights shall have an "on-off" switch, handle and swivel base.

One (1)  
54-15-5924

### **LEFT SIDE BODY SCENE LIGHTING**

The following scene lighting shall be located on the left side of the body:

One (1)  
54-15-1297

### **SCENE LIGHT**

One (1) Whelen M9 Series Model #M92SLC scene light(s) shall be provided. The steady burn scene light shall incorporate Linear Super-LED® and Smart LED® technology.

The M92SLC shall be furnished with a chrome trim ring, a rubber gasket, screws, and screw grommets for installation. The M92SLC shall have the ability to be installed as a surface mount scene light.

One (1)  
54-15-6400

### **SCENE LIGHT SWITCHING**

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the left side scene light(s). The switch shall be labeled "LEFT SCENE".

One (1)  
54-15-5928

### **RIGHT SIDE BODY SCENE LIGHTING**

One (1)  
54-15-1297

The following scene lighting shall be located on the right side of the body:

### **SCENE LIGHT**

One (1) Whelen M9 Series Model #M92SLC scene light(s) shall be provided. The steady burn scene light shall incorporate Linear Super-LED® and Smart LED® technology.

The M92SLC shall be furnished with a chrome trim ring, a rubber gasket, screws, and screw grommets for installation. The M92SLC shall have the ability to be installed as a surface mount scene light.

One (1)  
54-15-6500

### **SCENE LIGHT SWITCHING**

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the right side scene light(s). The switch shall be labeled "RIGHT SCENE".

One (1)  
54-15-5932

### **REAR BODY SCENE LIGHTING**

The following scene lighting shall be located on the rear of the body:

One (1)  
54-15-1297

### **SCENE LIGHT**

One (1) Whelen M9 Series Model #M92SLC scene light(s) shall be provided. The steady burn scene light shall incorporate Linear Super-LED® and Smart LED® technology.

The M92SLC shall be furnished with a chrome trim ring, a rubber gasket, screws, and screw grommets for installation. The M92SLC shall have the ability to be installed as a surface mount scene light.

One (1)  
54-15-6600

### **SCENE LIGHT SWITCHING**

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the rear scene light(s). The switch shall be labeled "REAR SCENE".

One (1)  
54-15-6700

### **SCENE LIGHT SWITCHING**

The rear scene lights shall activate automatically upon placing the transmission into reverse.

One (1)  
55-11-2100

### **DOOR OPEN LIGHT**

A red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The warning light shall also be attached to folding equipment racks and light towers as specified. The light shall be a flashing Whelen OS red LED (OSROOFCR) light and shall be properly marked and identified.

One (1)  
56-01-1400

### **ELECTRONIC SIREN**

A Federal Signal PA-300, model 690010, 200 watt full function electronic siren shall be mounted in the cab. The siren shall have the following features: electronic air horn, wail, yelp, Hi-Lo, P.A. and shall have a hard wired microphone. The siren shall be capable of driving one (1) or two (2) 100-watt speakers. The system shall automatically be protected from short circuits. Hands free operation shall allow the operator to turn the siren on and off from the horn ring if a horn/siren selector switch option is also selected.

One (1)  
56-02-1600

### **SPEAKER**

One (1) Federal Signal DynaMax 100-watt speaker, model #ES100C, shall be installed. The speaker shall feature a Neodymium driver and a high strength composite housing that is chemical resistant and maintains rigidity at high temperatures.

One (1)  
56-02-1650

### **SPEAKER**

One (1) stainless steel grille shall be installed on the speaker.

One (1)  
56-03-1100

### **SPEAKER LOCATION**

The siren speaker shall be installed in the center of the apparatus bumper.

One (1)  
57-02-1900

### **LIGHTBAR**

One (1) Whelen Justice series light bar shall be included with the apparatus cab. The light bar shall be a model JE2NFPA and shall be mounted on the roof of the cab, towards the front, above the windshield.

The light bar shall feature:

- A 56" light bar designed for high performance
- Four (4) red Linear Super LED corner modules
- Four (4) red CON3 LED hinged modules
- Two (2) white CON3 LED hinged modules with exterior clear optic lenses
- Clear hard coated lenses to provide extended life/luster protection against UV & chemical stresses
- Designed in accordance with NFPA Zone A requirements

One (1)



57-10-0600

### WARNING LIGHT ACTIVATION

The warning lights shall be activated through the master warning switch.

One (1)  
58-71-1820

### UPPER REAR WARNING LIGHTS

One (1) pair of Whelen Super LED, rotating beacons, P/N L31H\*F, shall be installed, one each side on the upper rear of the apparatus body. The unit shall have dimensions of 4" high x 7-9/16" deep.

One (1)  
57-20-8100

The driver side warning light shall be a Whelen LED rotator, model L31HRF with a red lens.

One (1)  
57-20-8101

The officer side warning light shall be a Whelen LED rotator, model L31HRF with a red lens.

One (1)  
58-74-5200

### REAR WARNING LIGHT MOUNTING

The upper rear lights shall be mounted on the upper corners of the apparatus body, one on each side.

One (1)  
58-03-2100

### LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen model LINZ6 LED warning lights shall be installed, one each side one the front of the chassis cab. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The dimensions of the lights shall be 2" x 4".

One (1)  
57-20-2000

The driver side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

One (1)  
57-20-2001

The officer side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

Two (2)  
58-01-2200

Each light shall be surface mounted with a Whelen Model LIN6FC chrome flange.

One (1)  
58-09-2100

### INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model LINZ6 LED warning lights shall be installed, one each side of the chassis. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The dimensions of the lights shall be 2" x 4".

One (1)

57-20-2000

The driver side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

One (1)  
57-20-2001

The officer side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

Two (2)  
58-01-2200

Each light shall be surface mounted with a Whelen Model LIN6FC chrome flange.

One (1)  
58-26-2100

### **LOWER MID-BODY WARNING LIGHTS**

One (1) pair of Whelen model LINZ6 LED warning lights shall be installed, one each side one of the apparatus, mid body. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The dimensions of the lights shall be 2" x 4".

One (1)  
57-20-2000

The driver side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

One (1)  
57-20-2001

The officer side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

Two (2)  
58-01-2200

Each light shall be surface mounted with a Whelen Model LIN6FC chrome flange.

One (1)  
58-36-2100

### **LOWER REAR SIDE WARNING LIGHTS**

One (1) pair of Whelen model LINZ6 LED warning lights shall be installed, one each side of the apparatus body, towards the rear of the body. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The dimensions of the lights shall be 2" x 4".

One (1)  
57-20-2000

The driver side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

One (1)  
57-20-2001

The officer side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

Two (2)  
58-01-2200

Each light shall be surface mounted with a Whelen Model LIN6FC chrome flange.

One (1)  
58-81-2000

### **LOWER REAR WARNING LIGHTS**

One (1) pair of Whelen model M6 LED warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 4-5/16" x 6-3/4".

One (1)  
57-20-1200

The driver side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

One (1)  
57-20-1201

The officer side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

One (1)  
10-02-1100

#### FLUID DATA PLAQUE

A fluid data plaque containing required information shall be provided based on the applicable components for this apparatus, compliant with NFPA Standards:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Drive axle lubricant
- Power steering fluid
- Pump transmission lubrication fluid
- Other NFPA applicable fluid levels or data as required

Location shall be in the driver's compartment or on driver's door.

One (1)  
10-02-1300

#### NO RIDE LABEL

A "NO RIDERS" label shall be applied on the vehicle at the rear step area or other applicable areas. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion is prohibited.

One (1)  
10-02-1500

#### HEIGHT LENGTH & WEIGHT WARNING LABEL

A highly visible label indicating the overall height, length, and weight of the vehicle shall be installed in the cab dash area.

#### CAB SEATING POSITION LIMITS

A label shall be installed in the cab to indicate seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

One (1)  
10-02-2500

#### HELMET WARNING TAG

A label shall be installed in the cab, visible from each seating position. The label shall read "CAUTION: DO NOT WEAR HELMET WHILE SEATED." Helmets must be properly stowed while the vehicle is in motion according to the current edition of NFPA 1901.

One (1)

10-03-6000

### **REAR TOWING PROVISIONS**

There shall be two tow eyes furnished under the rear of the body and attached directly to the chassis frame rails. There shall be a reinforcement spreader bar connecting the two tow eyes. Tow eyes are to be constructed of 3/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook.

One (1)  
80-43-2400

The tow plates shall be painted black.

One (1)  
10-04-0002

Bumper, Existing Commercial Bumper

One (1)  
10-06-1110

### **HUB AND LUG NUT COVERS**

The apparatus shall have chrome or stainless steel hub and lug nut covers on the front and single rear axles.

One (1)  
10-06-1600

### **TIRE PRESSURE INDICATOR**

There shall be a tire pressure indicator, p/n RWTG1235, at each tire's valve stem on the vehicle that shall indicate if there is insufficient pressure in the specific tire.

One (1)  
10-07-1500

### **EXHAUST HEAT SHIELD**

A heat shield shall be installed under the body in the areas where the exhaust system is routed.

One (1)  
10-08-2100

### **REAR MUD FLAPS**

A pair of black mud flaps shall be installed behind the rear wheels.

One (1)  
10-10-0600

### **CAB STEPS**

The driver's side cab step area on the 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.

One (1)  
10-10-0700

### **CAB STEPS**

The passenger's side cab step area on the 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.

Four (4)  
10-12-6610

### **SCBA BRACKET**

One (1)  
20-25-1600

Four (4) SmartDock Gen2 hands free SCBA bracket shall be provided for installation in the cab mounted SCBA seat. The bracket can be adjusted to fit any size bottle or brand of SCBA currently on the market. An NFPA 1901 approved auto-lock mechanism holds the SCBA in place for a secure fit in all directions. The bracket shall hold the cylinder in place while in transit and release using no straps, levers, buttons or switches.

### **WATEROUS CXVK SINGLE STAGE PUMP**

A Waterous model CXVK fire pump shall be midship mounted, single-stage centrifugal type and shall meet the requirements of the NFPA 1901 standard. The pump must be tested by the pump manufacturer for 10 minutes hydrostatically at a pressure of 350 psig. Certification by the pump manufacturer must be provided.

### **IMPELLER**

The bronze impeller shall be specifically designed for the fire service. The impeller shall be accurately balanced, both mechanically and hydraulically, for vibration free operation. The impeller shaft shall be stainless steel heat-treated and precisely ground to size and supported on both ends by oil or grease lubricated ball bearings.

The wear rings shall be replaceable, bronze, reverse-flow, labyrinth-type. The fire pump shall have deep groove ball bearings located outside the pump to give rugged support and proper alignment to the impeller shaft. Bearings shall be oil or grease lubricated. All pump bearings shall be completely separated from the water being pumped.

### **PUMP MOUNTING**

The pump shall be bolted to steel angles in pump module, using grade 8 bolts.

The midship mounted fire pump shall be mounted with steel angles and channel from the frame using grade 8 bolts, to both the frame and pump to permit removal of the pump for service. The pump shall be equipped with bolt flanges or Victaulic couplings on the suction and discharge side of the pump to provide for removal of fire pump without disturbing piping.

### **DRIVE LINE**

Fire pump shall be driven by a heavy duty 10 bolt PTO capable of enough torque to operate the fire pump at rated capacity for continuous duty. The PTO shall be of a "Hot Shift" style.

Hollow-tube drivelines and universals shall be properly matched to the engine and transmission output torque ratings.

All Pump Manufactures recommend that their Pumps are drained after every use and be stored dry. End user is responsible to follow this recommendation.

One (1)  
20-25-1520

### **1250 GPM FIRE PUMP SPECIFICATIONS**

The centrifugal type fire pump shall be a Waterous model CXK with a rated capacity of 1250 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

1250 GPM @ 150 PSI  
1250 GPM @ 165 PSI  
875 GPM @ 200 PSI  
625 GPM @ 250 PSI

One (1)  
22-03-1600

### **LEFT SIDE -- 6" UNGATED INTAKE**

One (1) 6" ungated suction intake shall be installed on the left side pump panel to supply the fire pump from an external water supply. The threads shall be 6" NST. The intake shall be provided with a removable screen.

One (1)  
22-41-5700

A 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

One (1)  
22-03-2600

### **RIGHT SIDE -- 6" UNGATED INTAKE**

One (1) 6" ungated suction intake shall be installed on the right side pump panel to supply the fire pump from an external water supply. The intake shall be provided with a removable screen.

One (1)  
22-41-5700

A 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

One (1)  
20-26-2200

### **FIRE PUMP MECHANICAL SHAFT SEAL**

The Waterous fire pump shall be equipped with self-adjusting, maintenance free, 'mechanical shaft seal' which is designed to be functional in the unlikely event of a seal failure.

One (1)  
20-26-2300

### **IMPELLER HUBS**

The Waterous fire pump impeller hubs shall be standard bronze type.

One (1)  
20-26-3400

### **PTO PUMP SHIFT SPECIFICATIONS -- PUMP AND ROLL**

An electric powered PTO pump shift shall be installed in the cab driver's area where not subject to accidental engagement.

A rocker switch for PTO pump engagement shall be installed in the cab driver's area. The pump shift system shall permit "pump and roll" operations, as well as stationary pumping operations.

The following indicator lights shall be included with pump shift.

1. A green indicator light, labeled "PUMP ENGAGED" shall indicate pump PTO has successfully been engaged.
2. A green indicator light, labeled "OK TO PUMP" shall indicate the PTO is engaged and parking brake is activated. Pump control is through the pressure governor.
3. A red flashing indicator light, labeled "PUMP & ROLL" shall indicate the PTO is engaged and parking brake is released. Pump control is through the driver's throttle pedal.
4. Pump shift and interlocks shall comply with applicable sections of the NFPA standards.
5. An instruction label and nameplate shall be provided to indicate proper pump engagement instructions.

One (1)  
27-03-1800

One (1)  
20-29-1200

#### **TRIDENT PRIMER – AUTOMATIC**

An automatic fire pump priming system shall be provided and installed. The system shall be oil-less type and environmentally safe. Once engaged, the system shall be fully automatic and not require any action from the pump operator/engineer when pump draft is lost. This feature provides an additional safety margin by maintaining pump flow from the available water source automatically during drafting operations. When air is introduced during a drafting operation from conditions such as whirlpools or turbulence from porta-tank refill operations, the priming system shall automatically engage to remove the air and stabilize water flow and pump pressure. For additional safety, the entire system shall operate at less than 70dBA of ambient noise.

The priming system shall engage automatically whenever the pump discharge falls below five (5) psi and shall remain engaged until a pump prime has been achieved. The priming system shall automatically disengage when a positive pump discharge pressure has been established. The electrical current draw from the chassis batteries shall not exceed four (4) amps at any given time of operation and allow for unlimited run time without causing an overheat condition for of any of the system components.

A single engagement switch shall be provided on the pump control panel that will allow the operator to engage the automatic pump priming system. There shall be a light provided on the pump control panel to indicate when the system is engaged. The pump shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds with the pump dry, through 20 feet of suction hose of appropriate size. The priming system shall comply with applicable sections of NFPA standards.

One (1)

**PRIMER CONTROL**

A rocker switch control shall be provided on the pump operator's panel, for the main pump primer control.

One (1)  
27-10-3100

**PRESSURE GOVERNOR AND MONITORING DISPLAY**

A Fire Research PumpBoss model PBA400-A00 pressure governor and monitoring display kit shall be provided on the pump panel. The kit shall include a control module, pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 6 3/4" high by 4 5/8" wide by 1 3/4" deep. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.

The following continuous displays shall be provided:

- CHECK ENGINE and STOP ENGINE warning LEDs
- Engine RPM; shown with four daylight bright LED digits more than 1/2" high
- Engine OIL PRESSURE; shown on an LED bar graph display in 10 psi increments
- Engine TEMPERATURE; shown on an LED bar graph display in 10 degree increments
- BATTERY VOLTAGE; shown on an LED bar graph display in 0.5 volt increments
- PSI / RPM setting; shown on a dot matrix message display
- PSI and RPM mode LEDs
- THROTTLE READY LED.

A dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. The brightness of the displays shall be automatically adjusted for day or night viewing.

The program shall store the accumulated operating hours for the pump and engine, previous incident hours, and current incident hours in a non-volatile memory. Stored elapsed hours shall be displayed at the push of a button.

It shall monitor inputs and support audible and visual warning alarms for the following conditions:

- High Engine RPM
- Pump Overheat
- High Transmission Temperature
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Battery Voltage
- Low Engine Oil Pressure
- High Engine Coolant Temperature

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A control knob that uses



optical technology shall adjust pressure or RPM settings. It shall be 2" in diameter with no mechanical stops, a serrated grip, and have a red idle push button in the center.

A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

One (1)  
21-00-2000

#### PUMP ANODES

There shall be sacrificial, zinc anodes in the pump steamer ports which shall protect the pump and piping from electrolysis. These anodes shall also act as screens.

One (1)  
21-00-3300

#### PUMP PLUMBING SYSTEM

The fire pump plumbing system shall be of rigid stainless steel pipe or flexible piping with stainless steel fittings. Mechanical grooved couplings shall be installed to permit flexing of the plumbing system and allow for quick removal of piping or valves for service. Flexible hose couplings shall be threaded stainless steel or mechanical grooved coupling connections.

The fire pump and plumbing shall be hydrostatically tested in compliance to applicable sections of NFPA standards. The test results shall be included in the delivery documentation.

One (1)  
21-01-0200

#### FIRE PUMP MASTER DRAIN

The fire pump plumbing system and fire pump shall be piped to a single push-pull type master pump drain assembly.

#### ADDITIONAL LOW POINT DRAINS

The plumbing system shall be equipped with additional low point manually operated drain valves to allow total draining of the fire pump plumbing system. These valves shall be accessible from the side of the vehicle and labeled.

One (1)  
21-01-5500

#### STAINLESS STEEL INTAKE MANIFOLD

The suction manifold assembly shall be fabricated with Schedule #10 type 304 stainless steel. All threaded fittings shall be a minimum of Schedule 10 stainless steel. The suction manifold assembly shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to installation. The stainless

steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

The stainless steel manifold assembly shall have a ten (10) year warranty.

One (1)  
21-01-6500

#### **STAINLESS STEEL DISCHARGE MANIFOLD**

The discharge manifold assembly shall be fabricated with minimum of Schedule #10 Type 304 stainless steel. All threaded fittings shall be a minimum of Schedule #40 stainless steel. The discharge manifold assembly shall have radiused sweep elbows to minimize water turbulence. The manifold shall be welded and pressure tested prior to installation. The stainless steel manifold inlet shall be attached to the pump discharge and have additional brackets as required to support the discharge manifold, valves and related components.

The stainless steel manifold assembly shall have a ten (10) year warranty.

One (1)  
21-01-7100

#### **FIRE PUMP & PLUMBING SYSTEM PAINTING**

The fire pump and plumbing system shall be painted by the fire apparatus manufacturer. The fire pump and the plumbing shall be painted metallic silver.

One (1)  
21-01-8100

#### **HOSE THREADS**

The hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intakes and discharges.

One (1)  
22-51-5110

#### **WATER TANK TO PUMP LINE**

A 3" water tank to fire pump line shall be provided with a full flow quarter turn ball valve, 4" piping, and with flex hose and stainless steel hose clamps. The tank to pump line shall be equipped with a check valve to prevent pressurization of the water tank.

The line shall be flow tested during the fire pump testing and shall meet applicable requirements of NFPA standards.

One (1)  
22-50-0100

The tank to pump valve shall be controlled at the pump operator's panel.

One (1)  
24-62-1300

The valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball.

One (1)  
22-55-4012

An Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature shall be provided on the intake. The handle shall be equipped with a color-coded name plate.

One (1)

**FIRE PUMP TO WATER TANK FILL LINE**

A 2" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be a full flow quarter turn ball valve with 2" piping and flex hose to tank. The valve control handle shall have a nameplate located near the valve control.

One (1)  
24-62-1200

The valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

One (1)  
22-55-4012

An Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature shall be provided on the intake. The handle shall be equipped with a color-coded name plate.

One (1)  
20-30-3200

**MIDSHIP FIRE PUMP DRIVESHAFTS AND INSTALLATION**

The midship PTO fire pump shall be installed and shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets. The PTO drive shaft(s) shall be spin balanced prior to final installation.

One (1)  
20-31-3600

**INTAKE RELIEF/DUMP VALVE**

A TFT A18 series, 2-1/2" intake relief/dump valve preset at 125 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

Discharge side of the intake relief valve shall be plumbed away from the pump operator.

One (1)  
20-31-4100

**FIRE PUMP COOLING**

The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This re-circulation line shall be controlled by a pump panel control valve with nameplate label noting it as the "fire pump bypass cooler". There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use.

One (1)  
20-31-5100

**CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM**

The apparatus shall be equipped with a heat exchanger for supplementary chassis engine cooling during fire pump operations. A manually opened valve, mounted at the operator's panel, shall direct water from the fire pump to the heat exchanger that is mounted in the engine radiator cooling hose. The system shall provide cooling water from the fire pump to circulate around the engine radiator coolant without mixing or coming in direct contact with the engine coolant.

A nameplate label shall be installed on the pump panel noting "engine cooling system" with "on-off" opening directions noted.

One (1)  
20-31-1100

### **UNDERWRITERS LABORATORIES FIRE PUMP TEST**

The pump shall undergo an Underwriters Laboratories Incorporated test per applicable sections of NFPA standards, prior to delivery of the completed apparatus.

The UL acceptance certificate shall be furnished with the apparatus on delivery.

One (1)  
20-31-1500

### **FIRE PUMP TEST LABEL**

A fire pump performance and rating label shall be installed on the fire apparatus pump panel. The label shall denote levels of pump performance and testing completed at factory. These shall include GPM at net pump pressure, RPM at such level, and other pertinent data as required by applicable NFPA standards. In addition, the pressure control device, tank to pump flow tests, and other required testing shall be completed.

In addition, the entire pump, suction and discharge passages shall be hydrostatically tested to a pressure as required by applicable NFPA standards. The pump shall be fully tested at the pump manufacturer's factory to the performance specifications as outlined by applicable NFPA standards. Pump shall be free from objectionable pulsation and vibration.

If applicable, the fire pump shall be tested and rated as follows:

- 100% of rated capacity at 150 pounds net pressure.
- 70% of rated capacity at 200 pounds net pressure.
- 50% of rated capacity at 250 pounds net pressure.
- 100% or rated capacity at 165 pounds net pressure.

One (1)  
22-12-1100

### **LEFT SIDE -- 2-1/2" GATED INTAKE**

One (1) 2-1/2" gated suction intake shall be installed on left side pump panel to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2-1/2" NST female thread of chrome plated brass.

The intake shall be equipped with a 3/4" drain and bleeder valve. A nameplate label and removable screen shall be installed.

One (1)  
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1)  
22-41-1100

A 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

One (1)  
24-62-1250

The valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

One (1)  
22-55-4050

The valve shall be equipped with a manually operated, swing-type manual control located adjacent the intake. The valve shall be equipped with a color-coded name plate.

One (1)  
23-06-2200

### **TWO (2) 1-1/2" CROSSLAY DISCHARGES**

Two (2) pre-connect 1-3/4" hose crosslays shall be installed over pump enclosure, with quarter turn 2" diameter ball valves. The outlets shall be a 2" NPT female swivel x 1-1/2" male NST hose threads.

The crosslay hosebeds shall have smooth aluminum sides. The hosebed decking shall be constructed with slots integrated into the hosebed floor. Dividers shall be installed to separate the crosslay beds.

One (1)  
21-00-4000

Each hose bed shall provide for a minimum capacity of 200 feet of 1-3/4" diameter double jacket hose with the hose and nozzle provided by the fire department.

Two (2)  
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

Two (2)  
24-61-1200

The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

Two (2)  
24-53-0020

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

Two (2)  
27-02-1500

Two (2) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

One (1)  
23-08-3300

### **CROSSLAY HINGED COVER WITH END FLAPS**

The crosslay hosebed shall be equipped with a single aluminum diamond plate hinged cover with vinyl end flaps with hook & loop fasteners. The cover shall have rubber bumpers, latching devices, and lift up handle on each end of the cover.

The hosebed cover shall be labeled, "Not a Standing or Walking Surface", per NFPA.

One (1)  
29-20-5600

The vinyl cover shall be red in color.

One (1)  
23-08-4130

### **CROSSLAY HOSE BED TRIM**

The crosslay hosebed shall be equipped anodized aluminum angle overlays, one on each end of the hosebed.

One (1)  
23-08-5019

### **CROSSLAY HOSEBEDS**

Crosslay hosebed(s) shall be mounted over the upper pump panel or gauge panel in the upper portion of the pump enclosure. The crosslay hosebed shall be approximately 12" from the top of the pump enclosure.

Two (2)  
23-09-4100

### **LEFT SIDE PUMP PANEL -- 2-1/2" DISCHARGE**

Two (2) 2-1/2" discharge shall be installed on the left side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle.

Two (2)  
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

Two (2)  
24-02-1200

Two (2) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.

Two (2)  
24-03-1400

Two (2) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be

provided.

Two (2)  
24-61-1250

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

Two (2)  
24-53-0020

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

Two (2)  
27-02-1500

Two (2) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

One (1)  
23-10-4100

#### **RIGHT SIDE PUMP PANEL -- 2-1/2" DISCHARGE**

One (1) 2-1/2" discharge shall be installed on the right side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle.

One (1)  
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1)  
24-02-1200

One (1) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.

One (1)  
24-03-1400

One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.

One (1)  
24-61-1250

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

One (1)  
24-53-0020

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1)  
27-02-1500

One (1) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

One (1)  
23-10-5200

### **RIGHT SIDE PUMP PANEL -- 3" x 4" DISCHARGE**

One (1) 3" discharge shall be installed on the right side pump panel area and shall be controlled by a full flow 3" slow-close quarter turn ball valve. The discharge shall have 4" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle.

One (1)  
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1)  
24-02-2600

One (1) lightweight aluminum elbow with 30 degree slant shall be provided. Threads shall be 5" Storz with lugs and manual locks x 4" female swivel NST with rocker lugs.

One (1)  
24-03-2200

One (1) 5" lightweight aluminum Storz cap with cable or chain securement shall be provided.

One (1)  
24-61-1300

The specified valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball.

One (1)  
24-53-0300

One (1) Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature and a manual slow-close device shall be provided on the specified discharge. The handle shall be equipped with color-coded name plate.

One (1)  
27-02-1500

One (1) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

One (1)  
23-13-3200



## **REAR RIGHT SIDE -- 2-1/2" DISCHARGE**

One (1) 2-1/2" discharge shall be installed on the right side rear panel of the apparatus body and shall be controlled by a quarter turn ball valve on the pump panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. The outlet shall be equipped with an engraved nameplate label shall be installed adjacent the valve control handle.

One (1)  
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1)  
24-02-1200

One (1) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.

One (1)  
24-03-1400

One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.

One (1)  
24-61-1250

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

One (1)  
24-53-0020

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1)  
27-02-1500

One (1) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

One (1)  
24-11-3200

## **3" MONITOR DISCHARGE**

One (1) 3" discharge shall be piped to the area over the pump enclosure with 3" NPT male threads provided. The pipe shall be equipped with Victaulic couplings (if necessary) and shall be properly secured to prevent movement when a monitor or deck gun is attached. The quarter turn ball valve shall be controlled on pump panel.

A color coded nameplate label shall be provided adjacent the valve control handle.

--cap discharge pipe, provision only

One (1)  
21-01-2500

An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift, to open and push down, to close.

One (1)  
24-61-1300

The specified valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball.

One (1)  
24-53-0300

One (1) Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature and a manual slow-close device shall be provided on the specified discharge. The handle shall be equipped with color-coded name plate.

One (1)  
27-02-1500

One (1) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

One (1)  
25-01-0010

### **FOAM SYSTEM PROVISIONS**

Provisions shall be provided for the future installation of a department/dealer supplied foam system.

One (1)  
25-20-1200

### **1" FOAM TANK CONTROL -- CLASS A**

A Class A foam tank shall be plumbed with 1" valve and corrosion resistant hose from the foam tank to the foam inlet of the foam system. The manually opened valve shall be provided behind the pump panel with a label.

One (1)  
25-21-1300

### **INTEGRAL CLASS A FOAM TANK -- 20 GALLON**

A twenty (20) gallon Class A foam tank shall be installed within the water tank. The non-corrosive foam tank shall meet applicable sections of NFPA standards. The foam concentrate tank shall be provided with sufficient wash partitions so that the maximum dimension perpendicular to the plane of any partition shall not exceed 36 inches. The swash partition(s) shall extend from wall to wall and cover at least 75 percent of the area of the plane of the partition.

The foam concentrate tank shall be provided with a fill tower or expansion compartment having a minimum area of 12 square inches and having a volume of not less than 2 percent of the total tank volume. The fill tower opening shall be protected by a completely sealed air-tight cover. The cover shall be attached to the fill tower by mechanical means. The fill opening shall be designed to incorporate a 1/4 inch removable screen and shall be located so that foam concentrate from a five (5) gallon container can be dumped directly to the bottom of the tank to minimize aeration without the use of funnels or other special devices.

The foam tank fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam concentrate from the tank. The pressure/vacuum vent shall not allow atmospheric air to enter the foam tank except during operation or to compensate for thermal fluctuations. The vent shall be protected to prevent foam concentrate from escaping or directly contacting the vent at any time. The vent shall be of sufficient size to prevent tank damage during filling or foam withdrawal.

A color coded label or visible permanent marking that reads "FOAM TANK FILL" shall be placed at or near any foam concentrate tank fills opening. A label shall be placed at or near any foam concentrate tank fill opening that specifies the type of foam concentrate the system is designed to use. Any restrictions on the types of foam concentrate that can be used with the system shall also be stated, and a warning message that reads "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM."

The foam concentrate tank outlet connection shall be designed and located to prevent aeration of the foam concentrate and shall allow withdrawal of 80 percent of the foam concentrate tank storage capacity under all operating conditions with the vehicle level.

One (1)  
25-22-9350

The foam tank(s) shall be fabricated by G3.

One (1)  
25-23-1000

#### FOAM TANK DRAIN -- UNDER TANK

The foam tank shall have a 1" gate valve drain provision installed.

One (1)  
27-36-1100

#### CLASS A FOAM TANK GAUGE

A Fire Research TankVision Pro model WLA360-A00 foam tank indicator kit shall be installed at the operator's panel. The kit shall include an electronic indicator module, a pressure sensor, a 10-ft sensor cable and a tank vent. The indicator shall show the volume of Class A foam concentrate in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon, and have a distinctive green label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels and a datalink to connect

remote indicators. Low foam warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the foam tank near the bottom. No probe shall be placed on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors. The foam tank vent shall be installed on the foam fill tower.

--foam tank gauge to be installed.

One (1)

== Pumper/Tanker-Side Mount Pump Compt - 901.023 10/03/23 ==

One (1)  
26-02-2200

### **SIDE MOUNT PUMP ENCLOSURE**

The side mount pump enclosure shall be removable and supported from the chassis frame rails. This enclosure will allow independent flexing of the pump enclosure from the body and allow for quick removal. The support structure shall be constructed of extruded aluminum tubing and angle.

All pump suction and discharge controls are to be mounted on the driver side pump operator's panel so as to permit operation of the pump from a central location. The fire pump, valves and controls shall be accessible for service and maintenance as required by applicable sections of NFPA standards.

The "master" gauges shall be suitably enclosed and mounted on a full pump compartment width "hinged" gauge panel constructed of the same material as the pump operators control panel, allowing access to the backside of all gauges and gauge lines. The individual gauges shall be mounted inline with the control handle or adjacent to the control handle. Panel is to include a stainless steel piano hinge, flush mounted chrome plated trigger latch, and stainless steel cable end stops. Electrical wiring and all gauge lines shall be properly tie wrapped to prevent kinking or cutting of the lines when the panel is opened.

The following controls and equipment as specified in the specifications, shall be provided on the pump panel or within the pump enclosure:

- Primer.
- Pump and plumbing area service lights.
- Pressure control device and throttle control.
- Fire pump and engine instruments.
- Pump intakes and discharge controls.
- Master intake and discharge gauges.
- Tank fill control.
- Tank suction control.
- Water tank level gauge.
- Pump panel lights.

## CROSSLAY INSTALLATION

The area atop the pump enclosure shall be notched for the installation of a crosslay hose bed. The hosebed shall have smooth sides and a perforated floor to allow for drainage. Provisions shall be provided to secure hose and equipment per requirements of applicable NFPA standards.

One (1)  
26-30-1100

### LEFT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

The left side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance with applicable sections of NFPA requirements.

One (1)  
26-30-1150

### RIGHT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

The right side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance with applicable sections of NFPA requirements.

One (1)  
26-31-1300

### PUMP ENCLOSURE ACCESS DOOR -- RIGHT SIDE UPPER

A pump panel access door shall be provided on the upper right side of the side mount pump enclosure. The door shall be constructed of 14 gauge #304 brushed stainless steel with push button type latches.

One (1)  
26-35-3200

### PUMP PANELS -- SIDE MOUNT

The pump operator's panel, along with the lower left hand and right hand pump panels shall be constructed of 14 gauge #304 brushed stainless steel and be fastened to the pump enclosure with 1/4" stainless steel bolts.

The instrument area shall have a stainless steel continuous hinge that shall swing for easy access to gauges.

One (1)  
26-35-1100

### LEFT SIDE PUMP PANEL -- BOLTED

The pump panel installed on the left hand side of the pump enclosure shall be fastened to the pump enclosure with 1/4" stainless steel bolts.

One (1)  
26-35-1200

#### RIGHT SIDE PUMP PANEL -- BOLTED

The pump panel installed on the right hand side of the pump enclosure shall be fastened to the pump enclosure with 1/4" stainless steel bolts.

One (1)  
26-50-1010

#### PUMP COMPARTMENT HEATER SYSTEM

The interior of the pump enclosure shall be equipped with a hot water heater system. The heater shall have a minimum of 35,000BTU and two centrifugal scroll case fans with a combined rating of 425CFM. The unit shall be piped to the chassis radiator system with standard heater hose. The hose shall be properly clamped and secured in place and be properly protected from engine exhaust or mechanical damage.

One (1)  
26-50-1230

The heater system shall be equipped with a 12-volt blower fan with switch located on the pump operator's panel. The switch shall be labeled accordingly.

One (1)  
26-50-3100

#### PUMP ENCLOSURE HEAT PAN

A removable casing constructed of galvanized steel, completely enclosing the underside of the pump compartment and heated by the engine exhaust shall be provided. The heat pan assembly shall include individual panels that can be easily removed from their mounting locations. The two outer slide-out panels shall be bolted in place.

One (1)  
26-50-4100

#### BODY AND PUMP HOUSE FLEX JOINT RUBBER GASKET

A flexible rubber gasket shall be installed between the pump compartment and the apparatus body. This gasket will be designed to seal the pump compartment to the apparatus body as tightly as practical. This gasket is necessary for winter operation in extremely cold climates.

One (1)  
26-55-1100

#### LABELS

Safety, information, data, and instruction labels for apparatus shall be provided and installed at the operator's instrument panel.

The labels shall include rated capacities, pressure ratings, and engine speeds as determined by the certification tests. The no-load governed speed of the engine, as stated by the engine manufacturer, shall also be included.

The labels shall be provided with all information and be attached to the apparatus prior to delivery.

One (1)  
26-55-2400

#### COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

Discharge and intake valve controls shall be color coded in compliance to guidelines of applicable sections of NFPA standards.

Innovative Controls permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls.

One (1)  
26-56-1125

#### MIDSHIP PUMP PANEL LIGHTS -- LEFT SIDE

Three (3) Techiq E10-W0001-1 or equal LED lights with clear lenses shall be installed under an instrument panel light hood on the left side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

One (1)  
26-56-1225

#### MIDSHIP PUMP PANEL LIGHTS -- RIGHT SIDE

Two (2) Tecniq E10-W0001-1 or equal LED lights with clear lenses shall be installed under an instrument panel light hood on the right side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

One (1)  
26-56-2000

#### PUMP ENGAGED LIGHT

One (1) pump panel light shall be illuminated at the time the fire pump is engaged into operation. The remaining lights shall be controlled by a switch located on the operator's instrument panel.

One (1)  
27-01-1500

#### MASTER DISCHARGE AND INTAKE GAUGES

Two (2) 4" diameter IC discharge pressure and intake gauges (30"-0-600 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

The master gauges shall have clear scratch resistant molded crystals with captive O-ring seals shall be used to ensure distortion free viewing and to seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40°F to +160°F. Each gauge shall exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy. A polished chrome-plated brass bezel shall be provided to prevent corrosion and protect the lens and gauge case.

One (1)

27-01-4100

### TEST TAPS

Test taps for pump intake and pump pressure shall be provided on the pump instrument panel and be properly labeled.

One (1)  
27-35-1100

### WATER TANK GAUGE

A Fire Research TankVision Pro model WLA300-A00 tank indicator kit shall be installed on the pump panel. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon material, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels and a datalink to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall place on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.

One (1)  
27-35-1300

### CAB MOUNTED WATER TANK GAUGE

A Fire Research TankVision model WLA205-A00 miniature tank indicator shall be installed in the chassis cab. The indicator shall show the volume of water in the tank on five (5) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be manufactured of Polycarbonate material with an integrated lens and have a distinctive blue label.

The miniature indicator shall receive input information over a single wire from a Fire Research TankVision primary indicator model, WLA300-A00 or WLA400-A00.

One (1)  
47-01-0500

### BOOSTER TANK

Booster Tank shall be constructed to meet and or exceed the requirements set forth in the NFPA pamphlet 1901, 2009 edition. Booster tanks shall be constructed of ½" thick UV stabilized Copolymer Polypropylene virgin grade sheet stock. All material used, seen and unseen, shall be a minimum of ½" non-corrosive UV stabilized stress relieved Copolymer Polypropylene thermoplastic, black in color and UV stabilized for maximum protection. The booster and or



foam tank shall be a specific configuration and so designed to be completely independent of the body compartments. All baffles and structural components shall have rabbet and dado joint construction to gain mechanical advantage. All components must be extrusion welded on all sides, walls, gussets, baffles, top and bottom to add structural support. After all components are extrusion welded, they must be visually, electronically and hydraulically tested to insure maximum strength and integrity. The top of the booster tank must be fitted with removable lifting eyes to facilitate easy removal. All swash partitions (Transverse and Longitudinal) must be manufactured from ½" UV Stabilized Copolymer Polypropylene. All partitions must be designed and equipped with proper venting and passage ways to allow movement of air and water through the compartments. All partitions must be designed to provide maximum water flow. All longitudinal and transverse partitions must be interlocked and extrusion welded to each other as well as the walls of the tank.

Tank to have a **Lifetime Warranty**.

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of ½" Copolymer Polypropylene with a minimum dimension of 12"x 8". The tower shall be located in the front corner, unless otherwise specified. The tank shall have a ½" thick removable Copolymer Polypropylene screen and hinged cover. Located inside the cover shall be a combination vent and overflow pipe. The minimum I.D of 4" schedule 40 Copolymer polypropylene pipe shall run inside the tank to behind the rear wheels, to maximize the traction.

The tank lid shall be constructed of UV Stabilized ½" Copolymer Polypropylene. The tank must have a removable lid to allow for complete inside inspection and cleaning, per NFPA 1901 A.18.2.2. All mechanical fasteners used to hold the lid shall be stainless steel, utilizing bolts and locking nuts. The tank must be designed in such a way to keep the fasteners from contact with the contents of the tank. A minimum of two lifting dowels must be incorporated into the tank to facilitate installation and removal of the tank.

There shall be one sump standard per tank. The sump shall be located in the front quarter of the tank, unless otherwise specified. On all tanks that require a front suction, a 3" schedule 40 Copolymer pipe shall be installed that will incorporate a dip tube from the front of the tank to pump location. The sump shall be a minimum of 10"x10"x5" The sump shall have a minimum of a 3" n.p.t. machined outlet. The sump shall be used as a combination clean out and drain. All tanks shall have anti-swirl plate located above the sump.

One (1)  
47-01-1000

### **WATER TANK - 1000 GALLON**

The apparatus shall be equipped with a one-thousand (1000) gallon polypropylene water tank.

One (1)  
47-01-1900

### **WATER TANK**

The booster tank shall be a TEE shape and design to allow for maximum compartmentation, and a lower center of gravity.

One (1)

29-10-1000

### **HOSEBED SINGLE AXLE**

The hose bed compartment deck shall be constructed entirely from maintenance-free, extruded aluminum slats. The slats shall have an anodized, radiused ribbed top surface. The slats shall be of widths approximately 3/4" high x 6" wide and shall be welded into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.

The apparatus hose body shall be properly reinforced without the use of angles or structural shapes and free from all projections that might injure the fire hose.

The main apparatus hose body shall run the full length of the apparatus body from behind the pump panel area to the rear face of the body.

The upper rear interior of the hose body on the right and left sides shall be overlaid with brushed stainless steel to protect the painted surface from damage by hose couplings.

One (1)  
29-10-5100

### **HOSE BED STORAGE CAPACITY**

The hose bed shall be designed to have a storage capacity for a minimum of 55 cubic feet of fire department supplied fire hose.

One (1)  
29-10-8100

### **ALUMINUM HOSEBED DIVIDER**

One (1) adjustable hosebed divider constructed of .250" aluminum shall be installed on the apparatus.

One (1)  
29-20-2000

### **VINYL HOSEBED COVER**

The apparatus shall be equipped with a vinyl hosebed cover.

The cover, approximately 74" wide, shall be secured utilizing a velcro fastening system at the front and sides of the hosebed body.

One (1)  
29-20-5600

The vinyl cover shall be red in color.

One (1)  
30-01-1800

### **1/8" ALUMINUM BODY**

The body shall be fabricated of aluminum extrusions, smooth aluminum sheet and aluminum treadplate.

The aluminum extrusion alloy shall be 6061 with a temper rating of T6 and have a tensile strength of 45,000 PSI and yield strength of 40,000 pounds. The aluminum extrusions shall 3" x

3" aluminum tubing, 1-3/4" x 3" aluminum tubing and 3" x 3" aluminum angle and specially designed extrusions, up to .250" wall thickness where applicable.

The smooth aluminum sheet material alloy shall be 5052 with a temper rating of H32 and have a tensile strength of 33,000 PSI and yield strength of 28,000 pounds.

The aluminum treadplate alloy shall be 3003 with a temper rating of H22 and have a tensile strength of 30,000 PSI and yield strength of 28,000 pounds.

The extrusions shall be designed as structural-framing members with the smooth aluminum and treadplate fabricated to form compartments, hosebeds, and floors. All aluminum material shall be welded together using the latest mig spray pulse arc welding system.

Compartment floors shall be of the sweep out design with the floor higher than the compartment door lip and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity. To ensure maximum storage space, the apparatus shall be constructed without any void spaces between the body and the compartment walls. Double wall construction does not meet this requirement.

All exterior compartments shall have polished aluminum drip moldings installed above the doors where necessary to prevent water from entering the compartments.

Wheel well panels shall be formed aluminum that is welded in place. There shall be no visible bolt heads, retention nuts or fasteners on the exterior surface of the panel. To fully protect the wheel well area from road debris and to aid in cleaning, a full depth radius wheel well liner shall be provided. The frame side of the wheel well area on each side of the opening shall be attached to the frame side of the front and rear compartments. All seams on the frame side of the body shall be welded and caulked to prevent moisture from entering the compartments.

The rear wheel wells shall be radius cut for a streamlined appearance. A fenderette shall be furnished at each rear wheel well opening, held in place with stainless steel fasteners.

#### FASTENERS

All aluminum and stainless steel components shall be attached using stainless steel fasteners.

Compartment door hinges, handrails and running boards shall be attached using minimum 1/4" diameter machine bolt fasteners.

3/16" diameter fasteners shall only be used in nonstructural areas such as; door handles, trim moldings, gauge mounting, etc.

#### ELECTROLYSIS CORROSION CONTROL

The apparatus shall be assembled using ECK or electrolysis corrosion control, on all high corrosion potential areas, such as door latches, door hinges, trim plates, fenderettes, etc. This coating is a high zinc compound that shall act as a sacrificial barrier to prevent electrolysis and corrosion between dissimilar metals. This shall be in addition to any other barrier material that may be used.

All 1/4" diameter and smaller screws and bolts shall be stainless steel.

Due to the expected life of the vehicle, proposals will only be acceptable from manufacturers that include these corrosion features.

One (1)  
30-02-2200

### **COMPARTMENT FLOORS**

The compartment floors shall be constructed of smooth aluminum material, to match the compartment interior walls.

One (1)  
30-10-1100

### **GALVANIZED SUB-FRAME**

The apparatus body subframe shall be constructed entirely of heavy steel structural channel material.

Two full frame lengths, three-inch (3") 3.4 pound per foot longitudinal steel channels shall form the sides of the body subframe and sides of the water tank cradle. Subframe crossmembers shall be fabricated with three inch (3") 3.4 pound per foot heavy steel channel cross members welded to the longitudinal body subframe sides and the full length frame pads.

Two full frame length 1/2" x 3" flat steel frame pads shall be attached to the body subframe and rest on top of the chassis frame rails for proper frame weight distribution.

The steel frame pads, longitudinal steel channels and subframe crossmembers shall be attached to the chassis frame rails using heavy "U" bolt fasteners to allow removal of the subframe and body assembly from the chassis. There shall be a barrier provided between the subframe and body to prevent electrolysis.

The rear subframe and lower body platform support members shall be of the "two piece" design, fabricated of 3.4 lb. per foot heavy channel and welded to the full length subframe channel liners at the rear.

A minimum of two rear platform support channels shall be provided and constructed of 3.4 lb. Per foot heavy steel material. Each support channel shall have welded in gusset where the support meets the rear subframe rails.

After fabrication the entire subframe assembly shall be hot dip galvanized to prevent corrosion.  
p The hot dip galvanized subframe shall have a lifetime warranty against failure due to corrosion.

This steel subframe shall carry the weight of the apparatus body, tank, water and equipment. This method of apparatus construction gives an excellent strength/weight ratio.

One (1)  
31-01-1100

### **BODY CONFIGURATION**

The aluminum apparatus body shall be up to 144" long, reference the drawing for actual body length.

One (1)  
44-06-2200

### **SINGLE AXLE WHEEL AREA**

For ease of accessibility and maintenance, wheel well panels shall be double break formed painted smooth plate that is welded in place.

To fully protect the wheel well area from road debris and to aid in cleaning, a full depth (minimum of 25") radius wheel well liner shall be provided. Wheel well liner shall be smooth aluminum to prevent corrosion.

One (1)  
44-06-4100

### **FENDERETTES**

The rear wheel wells shall be radius cut for a streamlined appearance. A polished aluminum fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless steel fasteners.

One (1)  
31-01-2135

### **BODY WIDTH**

The overall width of the pumper body shall not exceed 102".

### **COMPARTMENT DEPTH**

The side compartments on the pumper body shall have the following dimensions:

Lower portion depth of 26"  
Upper portion depth of 13"

One (1)  
29-00-1300

### **HOSEBED WIDTH**

The width of the pumper body hosebed shall be 74".

One (1)  
32-03-0070

### **COMPARTMENT HEIGHT**

The left side body compartments shall be 72".

One (1)  
32-03-1070

## **COMPARTMENT HEIGHT**

The right side body compartments shall be 72" high.

Seven (7)  
30-02-1150

## **ROLL UP DOOR CONSTRUCTION**

The roll up door(s) shall be fabricated from aluminum extrusions and be manufactured and assembled in the United States.

The door slats shall be double-wall extrusions with dimensions of 1.366" high x .315" thick. The exterior surface shall be flat and the interior surface concave to deflect loose equipment to prevent the door from jamming. Each slat shall have interlocking end shoes to prevent the slat from moving side to side resulting in binding of the door. Each slat shall be separated by a co-extruded PVC and rubber inner seal to prevent metal to metal contact and minimize dirt and moisture from entering the compartment. The inner seal shall not be visible from the exterior to maintain a clean appearance of door. The slats shall have interlocking joints with a folding locking flange to provide security and prevent penetration by sharp objects.

The track shall be a one (1) piece aluminum assembly that has an attaching flange and finishing flange incorporated into the design that facilitates installation and provides a finished look to the door without additional trim or caulking. A low profile side seal shall be utilized to maximize usable compartment space.

A drip rail designed to prevent water from dripping into the compartment shall be provided. The drip rail shall have a built in replaceable non-contacting seal to eliminate scratching of the surface of the door.

Bottom rail extrusion must have smooth back to prevent loose equipment from jamming the door and have "V" shaped double seal to prevent water and debris from entering the compartment. The door latch system shall be a full width one (1) piece lift bar that enables the user to operate with one hand.

The roll mechanism shall have a clip system that connects the curtain slats to the operator drum to allow for easy tension adjustment without tools. A four (4) inch diameter counterbalanced operator drum to shall be incorporated to assist in lifting the door.

Seven (7)  
30-02-1260

## **EZ-PULL DOWN STRAPS**

Seven (7) elastic nylon straps shall be provided and installed on each roll up door. The straps shall be secured to the side wall of the interior compartment in a way that will allow the EZ-Pull strap to contract automatically and tuck inside the compartment when closed to prevent the strap from dangling and hindering closing of the door. When the door is the open position, the straps shall be installed so that they are fully extended as to not interfere with removing items from the compartment. For the ease of locating, the straps shall be bright orange in color.

One (1)

**LEFT FRONT COMPARTMENT**

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)  
44-40-1100

One (1) louver with filter shall be installed in the compartment.

One (1)  
45-01-1050

**ADJUSTABLE SHELVING TRACKS**

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)  
55-01-1250

**COMPARTMENT LIGHTS**

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)  
55-06-1100

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)  
32-05-1355

**LEFT OVERWHEEL COMPARTMENT**

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)  
44-40-1100

One (1) louver with filter shall be installed in the compartment.

One (1)  
45-01-1050

**ADJUSTABLE SHELVING TRACKS**

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)  
55-01-1250

## COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)  
55-06-1100

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)  
32-05-1720

## LEFT REAR COMPARTMENT

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)  
44-40-1100

One (1) louver with filter shall be installed in the compartment.

One (1)  
45-01-1050

## ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)  
55-01-1250

## COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)  
55-06-1100

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)  
32-06-1120

## RIGHT FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.



One (1)  
44-40-1100

The compartment shall be equipped with the following:

One (1) louver with filter shall be installed in the compartment.

One (1)  
45-01-1050

#### ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)  
55-01-1250

#### COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)  
55-06-1100

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)  
32-06-1455

#### RIGHT HIGH SIDE COMPARTMENTS

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)  
44-40-1100

One (1) louver with filter shall be installed in the compartment.

One (1)  
45-01-1050

#### ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)  
55-01-1250

#### COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)  
55-06-1100

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)  
32-06-1720

### **RIGHT REAR COMPARTMENT**

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)  
44-40-1100

One (1) louver with filter shall be installed in the compartment.

One (1)  
45-01-1050

### **ADJUSTABLE SHELVING TRACKS**

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)  
55-01-1250

### **COMPARTMENT LIGHTS**

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)  
55-06-1100

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)  
33-60-1100

### **REAR BODY CONFIGURATION**

The rear of the apparatus body shall be of the flat back design.

One (1)  
32-08-0210

### **REAR CENTER COMPARTMENT**

There shall be one (1) full height compartment located at the rear of the apparatus. The compartment shall be equipped with a full height natural finish roll up door. The compartment

shall be open to the rear side compartments, providing a transverse compartment at the rear of the truck.

The compartment shall be equipped with the following:

One (1)  
44-40-1100

One (1) louver with filter shall be installed in the compartment.

One (1)  
45-01-1050

#### **ADJUSTABLE SHELVING TRACKS**

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)  
55-01-1250

#### **COMPARTMENT LIGHTS**

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)  
55-06-1100

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)  
33-61-1400

#### **REAR STEP - 14" BOLT-ON**

A 14" deep step surface shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The tailboard shall be constructed of .188" aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards.

A label shall be provided warning personnel that riding on the rear step while the apparatus is in motion is prohibited.

One (1)  
90-02-3500

#### **SLIDE OUT VERTICAL LADDER MOUNTINGS**

The ladder shall slide into the passenger rear of the apparatus, through the passenger side of the body. The vertically mounted slide in assembly shall be an integral part of the body and accessible through a hinged door.

One (1)  
90-02-2900

The hinged door shall be constructed of aluminum treadplate.

One (1)  
90-02-5310

## **INTERNAL FOLDING ATTIC LADDER MOUNTING**

An internal mounting shall be provided for the specified folding attic ladder.

One (1)  
90-03-0225

### **LADDER SOURCE**

New ground ladders shall be provided by the body builder.

Two (2)  
90-16-5400

### **PIKE POLE MOUNTING BRACKET**

Two (2) tube shall be provided for pike pole mounting. The tube shall have a 2" interior diameter and shall be mounted in the ladder tunnel.

One (1)  
90-16-6115

### **PIKE POLE SOURCE**

The pike poles shall be provided by the body builder.

One (1)  
90-25-7750

## **HARD SUCTION MOUNTING**

A hard suction hose compartment shall be provided above the body compartments, on the driver side. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction compartment shall be constructed of smooth material painted to match the body and shall be equipped with a hinged door with push to latch door catches.

One (1)  
90-02-2900

The hinged door shall be constructed of aluminum treadplate.

One (1)  
90-25-7850

## **HARD SUCTION MOUNTING**

A hard suction hose compartment shall be provided above the body compartments, on the passenger side. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction compartment shall be constructed of smooth material painted to match the body. The hard suction hose compartment shall have a hinged door with push to latch door catches.

One (1)  
90-02-2900

The hinged door shall be constructed of aluminum treadplate.

One (1)  
90-25-9115

### **SUCTION HOSE SOURCE**

New suction hose shall be provided by the body builder.

One (1)  
44-01-1450

## **FRONT BODY PROTECTION PANELS**

Aluminum tread plate overlays and panels shall be installed on the front of the body compartment from the lower edge to the top of the compartment doors.

One (1)  
44-01-6020

## **CATWALKS - DOOR HEADER**

The door header and the top of the compartments shall be painted job color.

One (1)  
44-01-4000

## **REAR BODY PROTECTION PANELS**

The rear body panels of the body shall be a smooth material, to allow for the proper application and installation of a "Chevron" stripe on the rear.

One (1)  
33-62-4200

## **FOLDING STEP RIGHT SIDE REAR**

A folding step of die cast high-strength zinc/aluminum alloy, plated with a superior automotive grade chrome finish shall be provided. The greater than 42 sq. in. serrated non-skid step traction area also offers an oversized non-slip grasp hand-hold. A heavy duty stainless steel spring design firmly holds the step in the open or closed positions. A rubber stop prevents any transit noise and rattles in the closed position. Step lighting shall be from a LED light mounted above the step.

The step has been third part tested to assure conformation of NFPA 1901 and FHA, 49CFR specifications for stepping surfaces and handhold.

The step shall be installed on the rear right side of the body.

One (1)  
38-90-2050

## **EZ CLIMB ACCESS LADDER - LEFT REAR**

There shall be a swing out and down access ladder supplied and installed on the apparatus, for accessing the top of the apparatus. It shall be of an all aluminum design and shall incorporate treads six (6") inches deep and no more than eighteen (18") inches apart. The ground to the first step dimension, on level ground, shall be no more than twenty-four (24") inches.

The access ladder shall have integrated hand holds in the steps, to aid in the ascent/descent of the ladder.

When in the deployed position the ladder shall have an angle of approximately 75-degrees to facilitate ascending and descending the ladder. The ladder shall be retained in the stowed and deployed position by two (2) gas cylinders and shall not require the use of latches to hold it in position.

One (1)  
33-70-1500

## **HANDRAIL REAR STEP**

Two (2) extruded aluminum non-slip handrails, approximately 48" in length, shall be provided and vertically mounted on the rear access ladder, one (1) on each side.

One (1)  
33-70-2100

#### **HANDRAIL BELOW HOSEBED**

One (1) extruded aluminum non-slip handrail, approximately 48" in length, shall be provided and horizontally mounted below the hosebed on the rear of the apparatus.

One (1)  
44-02-1100

#### **EXTRUDED ALUMINUM RUB RAILS**

Full body length polished aluminum rub rails shall be bolted in place on the lower right and left body sides. The side rub rails shall be a heavy extruded aluminum "C" channel.

One (1)  
44-02-2000

#### **NYLON SPACERS FOR RUB RAILS**

There shall be nylon spacers provided between the rub rail and the body. This shall allow wash out and replacement in the event of damage.

One (1)  
44-11-5100

#### **WHEEL WELL PROVISION LOCATION**

The wheel well provisions shall be located on the left side of the apparatus, ahead of the rear wheels.

One (1)  
44-10-9160

A breathing air cylinder storage compartment shall be provided in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in place and removeable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided. All SCBA compartments mounted in the wheel well area shall have an o-ring gasket with finger latch assembly.

7.5" diameter opening  
101 body 26" deep

One (1)  
44-10-6000

An one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

One (1)  
44-11-5300

#### **WHEEL WELL PROVISION LOCATION**

The wheel well provisions shall be located on the left side of the apparatus, behind of the rear wheels.

One (1)  
44-10-9160

A breathing air cylinder storage compartment shall be provided in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in place and removeable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided. All SCBA compartments mounted in the wheel well area shall have an o-ring gasket with finger latch assembly.

7.5" diameter opening  
101 body 26" deep

One (1)  
44-10-6000

An one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

One (1)  
44-11-5500

#### **WHEEL WELL PROVISION LOCATION**

The wheel well provisions shall be located on the right side of the apparatus, ahead of the rear wheels.

One (1)  
44-10-9160

A breathing air cylinder storage compartment shall be provided in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in place and removeable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided. All SCBA compartments mounted in the wheel well area shall have an o-ring gasket with finger latch assembly.

7.5" diameter opening  
101 body 26" deep

One (1)  
44-10-6000

An one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

One (1)  
44-11-5700

### **WHEEL WELL PROVISION LOCATION**

The wheel well provisions shall be located on the right side of the apparatus, behind of the rear wheels.

One (1)  
44-10-9160

A breathing air cylinder storage compartment shall be provided in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in place and removeable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided. All SCBA compartments mounted in the wheel well area shall have an o-ring gasket with finger latch assembly.

7.5" diameter opening  
101 body 26" deep

One (1)  
44-10-6000

An one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

One (1)  
80-22-1504

### **BODY PAINT PROCESS**



While constructing the truck body, all aluminum parts that are to be finish painted shall be properly fitted on the body and then removed to be painted as individually. The back side of all aluminum parts shall be sanded smooth of any burrs and sharp edges.

During reassembly of the apparatus, care shall be exercised in fitting and fastening the parts back in their respective position on the vehicle.

All aluminum parts shall be bolted to the body using stainless steel fasteners. Zinc or Cadmium plated fasteners are not acceptable. All bright metal fittings, if unavailable in stainless steel shall be heavily chrome plated. Iron fittings shall be copper plated prior to chrome plating.

All seam shall be caulked both inside and along the exterior edges with a urethane automotive sealant to prevent moisture from entering between any body panels.

The body and all parts shall be thoroughly washed with a grease cutting solvent (PPG DX330) prior to any sanding. After the body has been sanded and the weld marks and minor imperfections are filled and sanded, the body shall be washed again with (PPG DX330) to remove any contaminants on the surface.

The next two to four coats (depending on need) shall be a PPG DelFleet F4936 High Solids Epoxy Gray Primer. The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded with 320-600 grit sandpaper to ensure maximum gloss of the paint. The last step is the application of at least three coats of PPG Delfleet polyurethane two-component color (single stage). The film build being 2-3 mils dry. The single stage polyurethane, when mixed with corresponding catalyst shall provide a UV barrier to prevent fading and chalking.

All products and technicians are certified by PPG every two (2) years.

One (1)  
80-06-1100

### **APPARATUS COLOR**

--Body to match chassis Red; L0762EY MED RED ELITE EY

One (1)  
80-30-1200

### **INTERIOR COMPARTMENT FINISH**

Eight (8) apparatus side compartment interiors are to be painted with a spatter finish material. The compartments shall be cleaned with a grease remover, and then the surface sanded and prepared for painting. The compartment shall be provided with two (2) coats of white epoxy. The compartments are then coated with a splatter paint top coat.

One (1)  
80-42-1500

### **TOUCH-UP PAINT**

One (1) two (2) ounce bottle of touch-up paint shall be furnished with the completed truck at final delivery.

One (1)  
80-50-1100

### **LETTERING**

The dealer shall supply the apparatus lettering.

One (1)  
80-70-1300

### **CAB AND BODY STRIPE**

A straight Scotchlite reflective stripe, 4" in width, shall be applied horizontally around the cab and body in compliance with applicable NFPA 1901 standards. The purchaser shall specify the color and location of the stripe.

One (1)  
80-75-1600

### **COLOR OF STRIPING MATERIAL**

The color of the striping material shall be white.

One (1)  
80-72-1100

### **CHEVRON STRIPING**

The entire rear portion of the body shall have 3M reflective striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel.

One (1)  
80-75-1500

### **COLOR OF STRIPING MATERIAL**

The color of the striping material shall be red.

One (1)  
80-75-1800

### **COLOR OF STRIPING MATERIAL**

The color of the striping material shall be yellow.

One (1)  
80-72-1800

### **CHEVRON STRIPING**

The rear door shall have 3M reflective striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center on the rear roll up door.

One (1)  
80-75-1500

### **COLOR OF STRIPING MATERIAL**

The color of the striping material shall be red.

One (1)  
80-75-1800

## **COLOR OF STRIPING MATERIAL**

The color of the striping material shall be yellow.

One (1)  
80-72-2030

## **REFLECTIVE STRIPE**

An approximate 1" reflective stripe shall be applied on the vertical outer edge of each chassis door interior.

Commercial Cab

One (1)  
80-79-1000

## **YELLOW SAFETY TAPE - STANDING & WALKING SURFACES**

The apparatus shall meet NFPA 1901 15.7.1.6 designating any horizontal standing or walking surface higher than 48-in (1220 mm) from the ground and not guarded by railing or structure at least 12-in (300 mm) high shall have at least a 1-in (25 mm) wide safety yellow line delineation that contrasts with the background to mark the outside perimeter of the designated standing or walking surface area, excluding steps and ladders.

One (1)  
90-03-1400

## **ROOF LADDER**

One (1) Alco-Lite Model PRL-14, 14 foot aluminum roof ladder with folding steel roof hooks on one end and rubber safety shoes on the other end shall be provided on the apparatus. The ladder shall meet or exceed all latest NFPA Standards.

One (1)  
90-06-1500

## **EXTENSION LADDER**

One (1) Alco-Lite Model PEL-24, 24 foot two (2) section aluminum extension ladder shall be provided on the apparatus. The ladder shall meet or exceed latest NFPA standards.

One (1)  
90-08-1500

## **FOLDING ATTIC LADDER**

One (1) Alco-Lite Model FL-10, 10 foot folding aluminum attic ladder shall be provided. The ladder shall meet or exceed all the latest NFPA Standards.

One (1)  
90-16-2600

## **PIKE POLE**

One (1) 8' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

One (1)  
90-16-2800

## **PIKE POLE**

One (1) 10' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

Two (2)  
90-25-3100

### **SUCTION HOSE**

Two (2) 6.0" x 10 foot length of PVC flexible suction hose shall be supplied. The suction hose shall have light weight couplings provided.

Two (2)  
90-25-6100

### **HOSE COUPLINGS**

Light weight aluminum couplings shall be provided on the suction hose. A long handle female swivel shall be provided on one end and a rocker lug male shall be provided for the other end.

One (1)  
90-35-1900

### **EMERGENCY ROAD KIT**

One (1) DOT emergency kit shall be provided with the completed apparatus and shall include a 2.5 ABC fire extinguisher and three reflective triangles.