

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 NFPA 1901.

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 NFPA 1901.

One (1)
00-00-1610

NFPA PUMPER EQUIPMENT ALLOWANCE

In compliance with NFPA #1901 standards, 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 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, 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)
00-12-1100

FINANCIAL STABILITY SPECIFICATIONS

With high-profile instances of fire apparatus manufacturers encountering financial difficulties, it is imperative that fire departments be diligent in evaluating the financial position of the companies they solicit to build on their emergency response vehicles. A contract entered into with a company on shaky ground is a dangerous prospect, since conducting business with a manufacturer in such condition could open the department to monumental problems.

Take, for instance, the growing theme of manufacturers *requiring* as opposed to *offering* pre-payment and progressive payment options with a corresponding discount off the price of a vehicle. Such offers are made with an ulterior motive in mind, as it can be generally inferred that manufacturers requiring pre-payments and progressive payments do so because they need your cash *today* to fund production of other vehicles already in the backlog.

Should problems arise, as has been the case in situations too numerous to mention, your department risks losing any down payments already made or even the entire cost of a piece of equipment should certain pre-pay discount situations go awry.

While pre-payment discounts may be enticing, it is important to know just how stable the manufacturer seeking your funds is before you make that commitment. If you enter into one of these agreements and the manufacturer hits a rough patch, it is you that will be hurting, because your funds may not be recoverable. However, if you enter into a contract with a financially sound manufacturer, you will reap all of the benefits of a well-built truck at a lower cost. You may equally, by taking advantage of the time-value of money, be able to afford more truck than initially thought, because funds saved by leveraging pre-payment options could allow you get some added features that you might not necessarily have been able to afford.

With this in mind, it must be noted that Rosenbauer is a company with rock-solid financial stability. This is a statement not made lightly, as we can prove it to you. We can provide

language that you can insert into your bid specifications that stipulates that in order for bids to be accepted by a fire department, the company bidding must meet several fiscal criteria.

The first criteria call for the successful bidder to meet a debt-to-equity ratio not exceeding a 2.0 rating. Rosenbauer presently stands at a 1.51 rating, which is well-below the accepted rating. This low number results from Rosenbauer owning more assets with a marginal debt service. This means we are not using lenders to fund our operations, nor our growth.

The second requirement is that the debt coverage ratio of the successful body builder exceeds a 100 rating. The higher the number, the better able a company is to meet its payment obligations with banks and creditors. Rosenbauer's number is at 279.6, which is nearly three times the required amount. The higher the debt coverage ratio, the easily and more fluidly a company is positioned to pay its monthly obligations and operating costs.

The third criteria require that the equity ratio of the successful bidder must exceed .30 rating. A higher equity ratio indicates that the body builder has increased flexibility to meet its financial obligations which translates into greater financial stability. Rosenbauer currently has an equity ratio of .387 which is well above the accepted rating and an excellent indicator of financial strength.

When exploring and evaluating various manufacturers to consider for building your apparatus, there is little doubt you will find one that stands on as firmly a financial ground as Rosenbauer. While others are experiencing stressful issues that raise doubts as to the company's long-term viability, Rosenbauer continues to demonstrate a strengthening of its financial position in the apparatus manufacturing industry. Because Rosenbauer meets and exceeds all the above-stated financial bid requirements, we are best positioned to ensure customers of a strong relationship with the company, which cannot be claimed by most of our competitors in this volatile market.

The Rosenbauer America Dun and Bradstreet number is 02-447-3584. To acquire a Dun and Bradstreet report, telephone them at 1-800-234-3867 (in Canada 800-463-6362) or visit their web site address at www.dnb.com. Dun and Bradstreet is nationally-recognized, independent financial analysis company.

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.

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 be 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)
02-02-0100

PRE-CONSTRUCTION CONFERENCE (AT FIRE DEPARTMENT)

A pre-construction conference shall be conducted at the Fire Department Headquarters, at which time all final designs and equipment mounting locations will be approved, prior to any sheet metal being cut. A factory-trained dealer shall be present during the pre-construction conference

to answer any design questions relating to the layout of the apparatus. All expenses for travel, meals, and lodging shall be included. BIDDER SHALL INDICATE INTENTION TO PROVIDE THE REQUIRED PRE-CONSTRUCTION CONFERENCE IN THE PROPOSAL PACKET.

One (1)
02-03-0500

ISO COMPLIANCE

The manufacturer shall operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the "International Organization for Standardization (ISO)" specify the quality systems that shall be established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.

One (1)
02-06-0200

ROSENBAUER SOUTH DAKOTA COMPANY OVERVIEW

Please allow us to share with you a brief summary of the history and condition of Rosenbauer South Dakota, LLC formally known as Central States Fire Apparatus, LLC, Rosenbauer America Companies.

Rosenbauer South Dakota, LLC is located in Lyons, S.D., where it manufactures a complete line of fire apparatus including pumpers, tankers, rescue units, etc. The company operates in modern facilities consisting of 155,000 sq.ft., which features computer controlled fabricating equipment, down-draft paint booths and CAD system. Production currently averages over fifty (50) units per month.

Rosenbauer South Dakota began manufacturing fire apparatus in 1979 and incorporated under the laws of South Dakota in 1982. The company specializes in extruded aluminum construction that has been field proven for over twenty-eight years.

In view of the changes that our industry has gone through in the past few years, we felt it was important to take advantage of economies of scale, yet be aligned with an organization that is 100% committed to the fire service. Thus, on 5-1-98 Rosenbauer South Dakota merged with Rosenbauer, International of Leonding, Austria and (Rosenbauer Minnesota (General Safety)) of Wyoming, Minnesota. Rosenbauer South Dakota looks forward to the opportunity of expanded growth in the domestic and international markets.

Rosenbauer South Dakota is a profitable, financially secure company, and is listed and rated by Dun & Bradstreet. For your convenience, Rosenbauer South Dakota's Duns number is 10-229-2117. Rosenbauer South Dakota's Bank is the Home Federal Savings Bank in Crooks, SD. The contact person at the bank is Mr. Randy Snyders. Rosenbauer South Dakota's Federal ID# is 46-0448012.

Thank you for considering a Rosenbauer unit. We are sure that you will be more than pleased with a quality apparatus from Rosenbauer.

Feel free to contact us with any questions or concerns you may have regarding our proposal for fire apparatus.

One (1)
02-10-4000

DELIVERY

Rosenbauer shall deliver the completed fire apparatus to General Fire Apparatus in Spokane, Washington.

General Fire Apparatus will then perform a "Pre-Delivery Inspection" and complete the final delivery of the completed apparatus to the Fire Department Headquarters, in Salem, Oregon.

One (1)
02-13-5020

DEMONSTRATION

Fire Department personnel shall be properly instructed as to the proper use of the entire apparatus including, but not limited to, chassis, fire pump system, the apparatus and all equipment. The demonstration shall be made by a factory trained Specialist who shall be responsible for complete instruction as to operation and maintenance of the chassis, and the completed vehicle.

The demonstration specialist shall remain at the Fire Department for a sufficient amount of time to provide thorough instructions to all personnel, or as instructed by Chief of the Department. All meals, motel and travel costs shall be the responsibility of the successful bidder.

One (1)
02-13-7200

BODY MANUFACTURER SERVICE AND SUPPORT REQUIREMENTS

To ensure the purchaser a source of service and parts over the anticipated life of the apparatus, the manufacturer shall provide supporting information establishing their permanency in the industry and include in the proposal a description of our service abilities and facilities.

The manufacturer shall stock a complete line of fire fighting equipment and parts for this apparatus. Location of the manufacturing plant and nearest service facility must be outlined in the bid submission, including a complete history of the manufacturer. The manufacturer shall include in the bid a description of the service abilities and facilities.

The manufacturer's facilities shall provide, as a minimum, the following:

- Full body shop
- Paint spray booths for entire apparatus

- Sheet metal shears and brake press
- Fabrication and sheet metal department
- Plumbing facilities and UL testing area at service center
- Service and parts store for walk-in sales
- Engineering and office support personnel
- Adequate indoor storage of vehicle while service is being performed

Prior to the award of the contract the manufacturer shall make available the service center for an inspection tour at the convenience of the fire officials and or their designates (manufacturer is not responsible for travel costs associated with this visit). Although local service is available, the manufacturer shall be solely responsible for coordination and processing of all warranty claims.

One (1)
02-13-7300

LOCAL SALES AND SERVICE VEHICLE SUPPORT

The manufacturer and local sales/service facility shall provide information pertaining to authorized local sales representative of the apparatus.

One (1)
02-13-7400

TOLL FREE SERVICE NUMBER

Due to the nature of emergency fire and rescue services being subject to respond at any time of the day or night, the municipality requires that this also applies to the selling Dealer and the manufacturer.

On a typical day to day basis the request for service is expected to be requested from the selling Dealer. However, if the Dealer's service center is not readily available the municipality needs assurance that the OEM (Original Equipment Manufacturer) can be reached for assistance.

With that said, each bidder shall supply a toll-free telephone number that provides OEM emergency service assistance. This number, when called, shall be directed to a call center, then to an OEM service technician, 24 hours a day, 365 days a year.

There shall be a minimum of ten (10) OEM service technicians at any time in the que to answer an incoming emergency service call. One of which shall be the OEM's National Service Manager.

In the interest of providing the minimum level of acceptable service for the new apparatus this shall be considered a requirement of the successful bidder/proposal.

One (1)
01-16-0150

BODY WARRANTY

We warrant each new motorized fire apparatus manufactured by ROSENBAUER AMERICA, LLC for a period of ONE YEAR from the date of delivery, except for chassis and other components noted herein.

Under this warranty we agree to furnish any parts to replace those that have failed due to defective material or workmanship where there is no indication of abuse, neglect, unusual or other than normal service providing that such parts are, at the option of ROSENBAUER AMERICA, LLC, made available for our inspection at our request, returned to our factory or other location designated by us with transportation prepaid within thirty days after the date of failure or within one year from the date of delivery of the apparatus to the original purchaser, whichever occurs first, and inspection indicates the failure was attributed to defective material or workmanship.

The warranty on the chassis and chassis supplied components, storage batteries, generators, electrical lamps and other devices subject to deterioration is limited to the warranty of the manufacturer thereof and adjustments for the same are to be made directly with the manufacturer by the customer.

This warranty will not apply to any fire apparatus that has been repaired or altered outside our factory in any way, which in our opinion might affect its stability or reliability.

This warranty shall not apply to those items that are usually considered normal maintenance and upkeep services: including, but not limited to, normal lubrication or proper adjustment of minor auxiliary pumps or reels.

This warranty is in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on our part. We neither assume nor authorize any person to assume for us any liability in connection with the sales of our apparatus unless made in writing by ROSENBAUER AMERICA, LLC.

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 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)
01-20-1005

PAINT WARRANTY FIVE YEAR

The AkzoNobel paint performance guarantee will cover the areas of the vehicle finished with the specified product for a period of FIVE (5) year beginning the day the vehicle is delivered to the purchaser.

The full apparatus body, manufactured and painted by Rosenbauer America, LLC, shall be covered for the following paint failures as outlined on the guarantee certificate:

- Peeling or delaminating of the topcoat and/or other layers of paint.
- Cracking or checking.
- Loss of gloss caused by cracking, checking, or hazing.
- Any paint failure caused by defective AkzoNobel finishes, which are covered by this guarantee.

All guarantee exclusions, limitations, and methods of claims are covered in the full certificate provided to the original purchaser.

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)
01-21-0150

LETTERING WARRANTY

Rosenbauer America, LLC warrants to the original purchaser only, that the lettering and striping, installed by Rosenbauer America, LLC, will remain free from defects for a period of one (1) year

under normal use.

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 item, 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.

One (1)
01-17-0750

PUMP WARRANTY

Waterous warrants, to the original buyer only, that products and parts manufactured by Waterous will be free from defects in material and workmanship under normal use and service for a period of seven (7) years from the date the product is first placed in service, or seven and one half 7-1/2 years from the date of shipment by Waterous, whichever period will be the first to expire; provided the buyer notifies Waterous in writing, of the defect in said product within the warranty period, and said product is found by Waterous to be conforming with the aforesaid warranty.

When required in writing by Waterous, defective products must be promptly returned by the buyer to the Waterous Company at Waterous' plant at South St. Paul, Minnesota, or at such other place as may be specified by Waterous with transportation and other charges prepaid. A returned materials authorization (RMA) is required for all products and parts and may be requested by phone, fax or mail. The previously mentioned warranty excludes any responsibility or liability of Waterous for:

- A. Damages or defects due to accident, abuse, misuse, abnormal operating conditions, negligence, accidental causes or improper maintenance, or attributable to written specifications or instructions furnished by buyer.
- B. Defects in products manufactured by others and furnished by Waterous hereunder, it being understood and agreed by the parties that the only warranty provided for such products shall be the warranty provided by the manufacturer thereof which, if assignable, Waterous will assign to the buyer, if requested by buyer.
- C. Any product or part, altered, modified, serviced or repaired other than by Waterous, without its prior written consent.
- D. The cost of dismantling, removing, transporting, storing, or insuring the defective product or part and the cost of reinstallation.
- E. Normal wear items (packing, strainers, filters, light bulbs, anodes, intake screens, etc.)

This warranty is subject to Waterous' conditions of sale (Waterous Company form number F-2190 as currently in effect all of which are herein incorporated and by this reference made a part hereof.

All other warranties are excluded, whether expressed or implied by operation of law or otherwise, including all implied warranties of merchantability or fitness for purpose. Waterous shall not be liable for consequential or incidental damages directly or indirectly arising or resulting from breach of any of the terms of this limited warranty or from the sale, handling, or use of any other product or part. Waterous' liability hereunder, either for breach of warranty or for negligence, is expressly limited at Waterous' option:

A. To the replacement at the agreed point of delivery of any product or part, which upon inspection by Waterous or its duly authorized representative, is found not to conform to the limited warranty set forth above, or

B. To the repair of such product or part, or

C. To the refund or crediting to buyer of the net sales price of the defective product or part.

Buyer's remedies contained herein are exclusive of any other remedy otherwise available to the buyer.

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)
01-18-0450

WATER TANK WARRANTY

UNITED PLASTIC FABRICATION INC. Warrants each UPF POLY-TANK IIE Booster/Foam tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle (vehicle must be actively used in fire suppression). The UPF POLY-TANK IIE must be installed in accordance with the United Plastic Fabricating installation manual. Every UPF POLY-TANK IIE is thoroughly inspected and tested for leaks before leaving our facility. Should any problems develop with your UPF POLY-TANK IIE booster/foam tank and will not meet performance criteria during the service life of the vehicle, notify UPF in writing or call our TOLL FREE SERVICE HOT LINE 1-800-USA-POLY. Provide UPF with the serial number and a description of the problem. If the tank problem would render the truck out of service, UPF will dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank. (This time period is for North America only). If the vehicle can remain in service, UPF will dispatch a service technician within a mutually agreed upon time period.

We will repair, or at our option, replace the tank with a new UPF POLY-Tank IIE. UPF will cover customary and reasonable costs to remove and install the UPF POLY-TANK IIE. This warranty will not cover tanks that have been improperly installed, misused or abused, and the

serial number must not have, been altered, defaced or removed. UPF will not cover any unauthorized third party repairs or alterations. Any of these actions may void the warranty.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. THERE IS NO EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. ADDITIONALLY, THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF UNITED PLASTIC FABRICATION, INC.

This warranty contains the entire warranty. It is the sole warranty and price agreements or representation, whether oral or written, are either merged herein or expressly cancelled. UNITED PLASTIC FABRICATION, INC. Neither assumes, nor authorizes any person supposing to act on its behalf, to change, nor assume for it, any warranty or liability concerning its product.

IN NO EVENT WILL UNITED PLASTIC FABRICATION, INC BE LIABLE FOR AN AMOUNT IN EXCESS OF THE PRESENT RETAIL, PURCHASE PRICE PLUS INSTALLATION AND REMOVAL COST OF THE BOOSTER TANK, FOR ANY LOSS OR DAMAGE, WHETHER DIRECT OR INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHERWISE ARISING OUT OF FAILURE OF ITS PRODUCT.

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state. Some states do not allow exclusion or limitation of incidental or consequential damage, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

One (1)
01-33-3100

BODY MANUAL - PRINTED WITH DIGITAL COPY

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. In addition to the printed material, a digital copy shall be provided.

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)
02-90-1400

INTERNATIONAL CHASSIS

An International 2-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)
50-12-1100

ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL

An electrical console shall be constructed of .125" 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.

SHOP NOTE

A computer example/rendering of the center console shall be provided before construction begins. The FD requests an open area toward the rear of the console, for customer supplied radio installation.

One (1)
50-15-1100

BATTERY SYSTEM

The battery system shall be supplied with the chassis.

One (1)
50-15-3100

MASTER ELECTRIC SWITCH

One (1) 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)
50-15-8700

BATTERY CHARGER

A Mean Well PB-600-12, 40 amp, 90-264VAC battery charger will be supplied with the apparatus. The battery charger is capable of 2/3/8 stage charging. The battery charger shall be set to the 3 stage battery conditioning procedure. The charger is capable of charging batteries and functioning as a continuous 40 amp 12VDC power supply.

The charger features an extruded aluminum anodized housing, fully insulated heavy duty output terminals, three color indicator and a variable speed fan.

One (1)
50-20-1500

AUTO-EJECT

A Kussmaul "Super Auto-Eject" 20-amp automatic disconnect device shall be provided and installed on the 110 volt shoreline connection complete with weatherproof cover and matching plug. 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)
50-20-1120

SHORE POWER PLUG

The shore power plug shall be located at the left front cab door.

SHOP NOTE

Black Color Cover

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)
51-16-5022

LED SCENE LIGHT

A Fire Tech FT-B-46 46" brow light shall be provided and installed below the light bar. The light shall produce 19,008 lumens and be powder coated black.

One (1)
54-15-6100

SCENE LIGHT SWITCHING

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

One (1)
52-02-4100

130° CAMERA WITH 18 INFRARED ILLUMINATORS & 7" DIGITAL MONITOR

A Fire Research inView™ TrueSight™ model BCA111-A00 kit shall include: (1) one 130° camera with 18 infrared illuminators and (1) one 7" digital monitor.

The 130° Camera shall include the following features: 1/3" SONY® Color CCD Sensor, 250,000 pixels for Picture Elements and Gamma Correction with R=0.45 to 1.0. Camera shall have Mirror Image capability. (1) One 66 ft. Extension Cable shall be included for the camera. (1) One Screw Kit shall be provided for camera installation. The camera shall have a built-in high gain microphone. The Image Sensor shall provide 600 TV Lines PAL: 500(H) *582(V), NTSC: 510(H) *492(V). The 2.1MM Lens shall have a 130° Viewing Angle. The Waterproof rating shall be IP69K. The 130° Camera shall include an Internal Synchronization Sync System. Infrared Distance shall be 50 Ft. (18 Infrared IR). The Usable Illumination shall be 0 Lux (with IR ON). The Power Source shall be DC 12V (+/-10%). Signal-to-Noise ratio (S/N Ratio) shall be rated for higher than 48DB. The Electronic Iris rating shall be 1/50, 1/60-1/100,000 seconds. Video Output rating shall be 1VP.P 75 Ω. The IR Switch Control shall have a CDS Automatic

Control. Vibration and Impact Rating shall be 20G/100G. The Operating and Storage Temperature ratings both shall be -40°F ~ +176°F / RH 95% Max.

The model BCA111-A00 kit shall also include (1) one **7" TFT LCD Digital Color Monitor**. The specifications shall be as follows for the monitor:

- Dot Resolution: 800 x 3 (RGB) x 480
- Display Format/Contrast: 16:9 / 500:1
- Display Brightness: 400 CD/m²
- Viewing Angle: U:50° D:60° L/R:70°
- 3 Channel Video Input
- 1 VP-P, 75Ω
- Power Supply – DC 12V-24V (+/-10%)
- Power Consumption – 5W
- Operating Temperature: -22°F ~ +176°F
- Video System: Auto NTSC/PAL
- Overall Dimensions: 7" (L) x 5" (H) x 1" (D)
- Weight: 400G
- Vibration Rating: 5G
- Dot Pitch: 0.192 (H) x 0.1805 (V)
- Internal Sync System

One (1)
52-08-1009

HAND LIGHTS

All NFPA required portable hand lights supplied by the Customer must be installed before the apparatus is placed into service.

Two (2)
52-15-1200

RADIO ANTENNA BASE

Two (2) 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.

SHOP NOTE

Please terminate the wiring inside the center console.

One (1)
53-01-1200

MARKER LIGHTS

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

Two (2)
53-02-1300

LICENSE PLATE BRACKET

SHOP NOTE

Two (2) stainless steel license plate bracket shall be provided at the rear of the apparatus.

Two (2) brackets shall be provided. Please do not mount until the final inspection for location purposes. Note: there's no wiring and these are not a lighted bracket.

One (1)
53-03-2750

TAIL LIGHTS

One (1) pair of Whelen M6 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 M6 LED turn signals with populated sequential chevron arrow shall be provided.

One (1)
53-06-3550

BACKUP LIGHTS

One (1) pair of Whelen Series M6 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)

54-02-1600

CAB GROUND LIGHTS

Two (2) TecNiq E10 LED ground lights shall be installed on the chassis cab, one under each cab door.

One (1)
54-02-2300

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 one (1) LED light located on each side of the chassis cab.

One (1)
54-03-1280

PUMP PANEL GROUND LIGHTS

Two (2) TecNiq LED #LED E10 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)
54-03-1680

REAR STEP GROUND LIGHTS

Two (2) TecNiq LED #LED E10 ground lights shall be installed under the rear step. 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)
54-04-1999

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

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.

Three (3)
54-15-1290

SCENE LIGHT

Three (3) Whelen M9 Series Model # M9LZC scene light(s) shall be provided. The steady burn scene light shall incorporate Linear Super-LED® and Smart LED® technology.

The M9LZC shall be furnished with a chrome trim ring, a rubber gasket, screws, and screw grommets for installation. The M9LZC shall have the ability to be installed as a surface mount scene light.

Voltage: +12v
Size: H=6.51", W=10.34", D=1.892"
Amp Draw: 6.0 Amps
Lens Color: Clear

One (1)
54-15-5300

SCENE LIGHT LOCATION

One (1) scene light shall be located on the left side of the pump enclosure.

One (1)
54-15-5400

SCENE LIGHT LOCATION

One (1) scene light shall be located on the right side of the pump enclosure.

One (1)
54-15-5700

SCENE LIGHT LOCATION

One (1) scene light shall be located on the rear of the apparatus body.

One (1)
54-15-6100

SCENE LIGHT SWITCHING

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

One (1)
55-11-2400

DO NOT MOVE APPARATUS LIGHT

The front headliner of the cab shall include a flashing red Whelen round LED light, 3SR00FRR, with a red lens clearly labeled "Do Not Move Apparatus". In addition to the flashing red light, an audible alarm shall be included which shall sound while the light is activated.

The flashing red light shall be 3.00 inches in diameter and shall be located centered left to right for greatest visibility.

The light and alarm shall be interlocked for activation when either a cab door is not firmly closed or an apparatus compartment door is not closed, and the parking brake is released.

One (1)
56-01-1360

ELECTRONIC SIREN

One (1) Federal Signal PA-300, model 690002, 100 watt full function electronic siren shall be mounted in the cab. The siren shall have the following features: electronic air horn, wail, yelp, priority, P.A., and shall have a hard wired microphone. The optional TAP II feature allows the driver to change the siren tone via the vehicle's horn ring. The siren shall be capable of driving (1) 100-watt speaker. The system shall automatically be protected from short circuits.

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)
56-03-1800

SPEAKER LOCATION

The siren speaker shall be installed at the apparatus bumper location, as determined by the body manufacturer.

One (1)
57-02-2000

LIGHTBAR

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

The light bar shall feature:

- A 62" 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

LIGHTBAR ACTIVATION

The front upper light bar shall be activated through the master warning switch.

One (1)
58-71-1830

UPPER REAR WARNING LIGHTS

One (1) pair of Whelen Super LED Rota-Beam rotating beacons 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)
57-20-8214

The driver side warning light shall be a Whelen Rota-Beam blue LED rotator, model R3162F with a clear lens.

One (1)
57-20-8211

The officer side warning light shall be a Whelen Rota Beam red LED rotator, model R3165F with a clear lens.

One (1)
58-74-5100

REAR WARNING LIGHT MOUNTING

The upper rear lights shall be mounted on cast aluminum stanchions attached to the apparatus body, one on each side.

One (1)
58-03-2000

LOWER FRONT WARNING LIGHTS

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

One (1)
57-20-1210

The driver side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

One (1)
57-20-1213

The officer side warning light shall be a Whelen Model M6BC blue Super-LED™ with clear lens.

Two (2)
58-01-2141

Each light shall be mounted with a Whelen Model M6FB black flange.

One (1)
58-09-2000

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model M6 LED warning lights shall be installed one each side of the chassis cab. The dimensions of the lights shall be 4-5/16" x 6-3/4".

One (1)
57-20-1210

The driver side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

One (1)
57-20-1211

The officer side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

One (1)
58-26-2400

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model M2 LED warning lights, model M2WR, shall be installed, one each side of the apparatus, mid-body in the rub rail. The dimensions of the lights shall be 4-1/4" x 2-11/16".

One (1)
57-20-1012

The driver side warning light shall be a Whelen Model M2WBC wide-angle blue Super-LED™ with clear lens.

One (1)
57-20-1013

The officer side warning light shall be a Whelen Model M2WBC wide-angle blue Super-LED™ with clear lens.

One (1)
58-36-2400

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Whelen model M2 LED warning lights shall be installed , one each side of the apparatus, towards the rear of the body, in the rub rail. The dimensions of the lights shall be 4-1/4" x 2-11/16".

SHOP NOTE

Will only fit in EXT rub rail WITHOUT bezel

One (1)
57-20-1010

The driver side warning light shall be a Whelen Model M2WRC wide-angle red Super-LED™ with clear lens.

One (1)
57-20-1011

The officer side warning light shall be a Whelen Model M2WRC wide-angle red Super-LED™ with clear lens.

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)
57-20-1210

The driver side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

One (1)
57-20-1213

The officer side warning light shall be a Whelen Model M6BC blue Super-LED™ with clear lens.

One (1)
10-02-1100

FLUID DATA PLAQUE

One (1) 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)
10-02-1200

DATA & WARNING LABELS

HEIGHT LENGTH & WEIGHT

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

One (1)
10-02-1300

NO RIDE LABEL

One (1) "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)
10-02-2100

CAB SEATING POSITION LIMITS

One (1) 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

One (1) 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)
10-06-1600

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)
10-08-2100

REAR MUD FLAPS

One (1) pair of black mud flaps shall be installed behind the rear wheels.

One (1)
10-19-4000

AIR SHORELINE CONNECTION

One (1) compressed air inlet fitting shall be provided for connection to an external air source to maintain the air brake pressure. The air inlet shall have a check valve installed to prevent air from escaping from the air storage tanks on the chassis.

The air inlet fitting shall be located in the driver's side step or door area.

One (1)
20-27-1650

WATEROUS CGVK SINGLE STAGE PUMP

A Waterous model CGVK fire pump shall be midship mounted, single stage centrifugal type, meeting all applicable sections of the NFPA requirements. The pump must be tested by the pump manufacturer for 10 minutes hydrostatically to 500 PSI and certification by the pump manufacturer must be provided.

All pump components shall be manufactured by the Waterous Company to insure sole source responsibility and engineered compatibility. The fire pump shall be mounted in accordance with manufacturer's recommendations and the following specifications.

PUMP HOUSING

The pump casing shall be a three-piece, vertically split design, high strength gray iron.

IMPELLER

The impeller shaft shall be stainless steel, heat treated, and precisely machined and ground to size. The impeller shaft shall be stainless steel, heat treated, and precisely machined and ground to size.

The wear rings shall be replaceable, bronze, reverse-flow, labyrinth-type. A face-type, self-adjusting, corrosion and wear resistant mechanical seal is to be provided. 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.

FIRE PUMP MOUNTING

The fire pump shall be mounted with steel angles and channel from the chassis 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 SYSTEM

Fire pump shall incorporate direct mount, high strength, gear drive transmission. 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.

DRIVE LINE

The installation shall include hollow tube drivelines and universals shall be properly matched to the engine and transmission output torque ratings.

One (1)
20-27-0152

750 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Waterous model CGVK with a rated capacity of 750 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:
750 GPM @ 150 PSI

750 GPM @ 165 PSI
525 GPM @ 200 PSI
350 GPM @ 250 PSI

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)
20-29-1252

PRIMER CONTROL

A manual push button shall be provided on the pump operator's panel, for the manually priming the main pump.

One (1)
20-29-1299

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)

27-10-3100

PRESSURE GOVERNOR AND MONITORING DISPLAY

One (1) 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)
20-28-3400

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.

An electric powered locking 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 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.

SHOP NOTE

Please use Locking Rocker Switch

One (1)
21-00-2004

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)

21-00-3200

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)
21-01-7300

PLUMBING SYSTEM

The plumbing system shall be unpainted.

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)
22-03-1500

LEFT SIDE -- 5" UNGATED INTAKE

One (1) 5" 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 5" NST male. The intake shall be provided with a removable screen.

One (1)
22-41-5600

One (1) 5" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

One (1)
22-03-2500

RIGHT SIDE -- 5" UNGATED INTAKE

One (1) 5" 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)
22-41-5600

One (1) 5" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

One (1)
22-51-5210

WATER TANK TO PUMP LINE

One (1) 3" water tank to the 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

One (1) 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)
23-02-1300

FIRE PUMP TO WATER TANK FILL LINE

One (1) 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

One (1) 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)
20-31-3600

INTAKE RELIEF/DUMP VALVE

One (1) 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)
20-31-4600

OVERHEAT PROTECTION MANAGER

The Waterous fire pump shall be equipped with an overheat protection manager which monitors the temperature of the water inside the pump and relieves water when the temperature inside the pump exceeds 140 degrees Fahrenheit.

The Waterous Model #OPM shall also have an warning light on the pump panel to provide additional protection in the event the temperature inside the pump continues to rise with the overheat protection valve open. The warning light and test button shall be mounted to a heavy polished casting that is mounted to the pump operator's panel.

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

One (1) 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)

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.

One (1)
23-09-4100

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

One (1) 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.

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)
23-10-4100

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)
23-12-2100

LEFT SIDE FRONT OF HOSEBED -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be installed to the left side front of hosebed area and 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. An engraved 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)
24-61-1250

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.

SHOP NOTE

Note: A Dealer Supplied Akron #3430 GP Manual monitor (or equal) and direct truck mount adapter shall be installed. The monitor shall be capable of 360-degree rotation and be capable of flowing 1000 GPM when installed on the direct truck mount shall be installed.

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)
24-30-3200

ELECTRIC REWIND HOSE REEL

One (1) Hannay painted steel hose reel with leak proof ball bearing swing joint, adjustable friction brake, electric rewind shall be installed. The reel shall be plumbed with wire reinforced, high-pressure hose coupled. The reel shall be bolted to a mounting system for easy service or removal.

The hose reel is to be mounted front of hosebed area.

One (1)
24-31-2100

A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at construction.

One (1)
24-32-1200

One (1) 1" discharge shall be provided and piped from the fire pump to the hose reel with flexible high pressure hose. The quarter turn ball valve shall be controlled on pump panel. A color-coded nameplate label shall be provided near the valve control handle.

One (1)
21-01-2500

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)
24-32-1700

The specified hose reel shall be piped to the normal pressure side of the fire pump.

One (1)
24-61-1100

One (1) Akron 8000 Series one-inch (1") valve with a stainless ball shall be supplied.

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)
24-33-1300

Three (3) 50' foot lengths (150') of 3/4" water hose with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

One (1)
24-33-9100

One (1) stainless steel roller assembly shall be provided on the left side hose reel.

One (1)
24-33-9200

One (1) stainless steel roller assembly shall be provided on the right side hose reel.

One (1)
80-43-1600

HOSE REEL PAINTING

The hose reel(s) shall be painted silver grey.

One (1)
26-02-1100

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. The panel shall 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.

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)
26-35-3200

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)
26-55-1100

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)
26-56-2100

PUMP ENGAGED LIGHT

One (1) green pump panel indicator light shall be illuminated in the switch panel at the time the fire pump is engaged into operation. The light shall be a Whelen M2 series light with green LED's and clear lenses.

The light shall be located above the pump panel and light hood for ease of viewing from a distance.

One (1)
27-01-2620

MASTER DISCHARGE AND INTAKE GAUGE BEZEL

Two (2) 4" diameter IC discharge pressure and intake gauges (30"-0-400 PSI) shall be provided. The gauges and test ports shall be mounted in an IC bezel assembly, P/N 3001496. 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)
27-35-4012

WATER TANK LEVEL GAUGE - PUMP PANEL

The apparatus shall be equipped with an Innovative Controls SL Series Tank Level Monitor System shall be installed. The display model # shall be 3030358-04. The system shall include an electronic water display module, one (1) pressure transducer-based sender unit, and a 15' connection cable. The display module shall show the volume of water in the tank using 10 super bright easy-to-see LEDs arrangement. The 10-LED arrangement shall form a straight vertical pattern to easily distinguish the tank level at a glance. Tank level indication is enhanced by the use of green LEDs at the full and near-full levels, amber LEDs between $\frac{3}{4}$ and $\frac{1}{4}$ tank levels, and red LEDs at the near-empty and empty levels. The electronic water display module shall be waterproof and shock resistant being encapsulated in a urethane-based potting compound. The potted water display module shall be mounted to a chrome plated panel-mount bezel with a durable easy-to-read polycarbonate insert featuring blue graphics and a water icon for water.

All programming functions shall be accessed and performed from the front of the display module. The programming includes self-diagnostics, manual or self-calibration, and networking capabilities to connect remote slave displays. Low tank level warnings shall include flashing red LEDs starting below the ¼ level and an output for an audible alarm.

The display module shall receive an input signal from a pressure transducer. This stainless steel sender unit shall be installed on the outside of the water tank near the bottom. All wiring, cables and connectors shall be waterproof without the need for sealing grease.

Location of the water tank level display shall be at the pump panel.

One (1)
27-35-6124

WATER TANK LEVEL LIGHTS

Three (3) Whelen PS-TANK2 vertically mounted LED lights shall be installed one each side of the apparatus and one (1) on the rear to allow for monitoring the water tank level from a distance.

They shall be configured as follows:

- GREEN - Position 1 indicates FULL
- BLUE - Position 2 indicates 3/4
- AMBER - Position 3 indicates 1/2
- RED - Position 4 indicates 1/4

Each light shall remain illuminated until the water level drops below full 3/4, 1/2, or 1/4 levels. When the level drops below 1/4 the RED light will flash to indicate an empty tank. The Whelen PS-TANK water tank level lights shall be controlled with an Innovative Controls remote driver.

SHOP NOTE

The water level gauges to illuminate when the pump is engaged and the pump is engaged.

One (1)
25-26-1900

WATER TANK - 2000 GALLON

The apparatus shall be equipped with a two-thousand (2000) gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe (a six-inch (6") overflow pipe shall be provided if required by dump valve installation).

One (1)
25-25-0060

WATER TANK

The apparatus shall be equipped with a "T" shaped tank.

One (1)
25-44-1500

WATER TANK FILL TOWER

A fill tower measuring approximately 12" x 12" square shall be provided on the water tank.

One (1)
25-42-1100

The apparatus shall be equipped with a polypropylene water tank. The tank body and end bulkheads shall be constructed of .75" thick, polypropylene, nitrogen-welded and tested inside and out. Tank construction shall conform to applicable NFPA standards. The tank shall carry a lifetime warranty.

The transverse and longitudinal .375" thick swash partitions shall be interlocked and welded to each other as well as to the walls of the tank. The partitions shall be designed and equipped with vent holes to permit air and liquid movement between compartments.

The .5" thick cover shall be recessed .375" from the top of the side walls. Hold down dowels shall extend through and be welded to both the covers and the transverse partitions, providing rigidity during fast fill operations. Drilled and tapped holes for lifting eyes shall be provided in the top area of the booster tank.

A combination vent/water fill tower shall be provided at front of the tank. The 0.5" thick polypropylene fill and overflow tower shall be equipped with a hinged lid and a removable polypropylene screen. The overflow tube shall be installed in fill tower and piped with a minimum schedule 40 PVC pipe through the tank.

The water tank sump shall be located in the forward area of the tank. There will be a schedule 40 polypropylene tank suction pipe from the front of the tank to the tank sump. The tank drain and clean out shall be located in the bottom of the tank sump. The sump shall have a minimum 3" threaded outlet on the bottom to be used for a combination clean out and drain.

The pump to tank refill connection shall be a sized to mate with tank fill discharge line. A deflector shield inside the tank will also be provided.

The tank shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area.

The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of 1/4" x 1" and a hardness of approximately 60 durometer. The rubber must be installed so it will not become dislodged during normal operation

of the vehicle. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both in the front and rear as well as side to side to prevent tank from shifting during vehicle operation.

A picture frame type cradle mount with a minimum of 2" x 2" x 1/4" mild steel, stainless steel, or aluminum angle shall be provided or the use of corner angles having a minimum dimension of 4" x 4" x 1/4" by 6" high are permitted for the purpose of capturing the tank.

Although the tank is designed on a free floating suspension principle, it is required that the tank have adequate vertical hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on top of the tank, half way between the front and the rear on each side of the tank. These stops can be constructed of steel, stainless steel or aluminum angle having minimum dimensions of 3" x 3" x 1/4" and shall be approximately 6" to 12" long. These brackets must incorporate rubber isolating pads with a minimum thickness of 1/4" inch and a hardness of 60 durometer affixed on the underside of the angle. The angle should then be bolted to the body side walls of the vehicle while extending down to rest on the top outside edge of the upper side wall of the tank.

Hose beds floors must be so designed that the floor slat supports extend full width from side wall to side wall and are not permitted to drop off the edge of the tank or in any way come in contact with the individual covers where a puncture could occur. Tank top must be capable of supporting loads up to 200 lbs per sq. foot when evenly distributed. Other equipment such as generators, portable pumps, etc. must not be mounted directly to the tank top unless provisions have been designed into the tank for that purpose. The tank shall be completely removable without disturbing or dismantling the apparatus structure.

One (1)
25-42-1200

The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method shall provide a liquid barrier, offering leak protection in the event of a weld compromise.

The tank shall be equipped with Polychromatic fill towers. The water fill tower shall be blue in color. The foam tank fill towers, if applicable, shall be yellow for foam A and green for foam B and black for any additional foam fill towers.

The water tank shall be certified for the capacity of the water tank prior to delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided to the purchaser when the apparatus is delivered.

The tank shall be manufactured by United Plastic Fabricating (UPF).

One (1)
25-50-3000

DIRECT TANK FILL

One (1) 4.0" diameter direct tank fill inlet shall be provided. The inlet shall have a 4.0" diameter slow-close gear operated valve and shall include a 4" NSTM male adapter and cap.

The valve and control handle shall be located at the rear of the apparatus body. The fill line shall have an "in-tank" slow fill safety protection system to protect the tank during filling for high flow conditions.

One (1)
25-62-1260

QUICK DUMP - REAR

One (1) Newton 10" quick dump valve shall be provided and externally mounted. The location shall be at the center rear of the apparatus.

One (1)
25-62-2400

Electric operated controls shall be provided to open and close the rear dump valve, one (1) switches (one for each valve) shall be conveniently located in the cab and two (2) on the rear of the apparatus body. (One (1) Each Side)

One (1)
25-62-2550

The Newton dump valve installed on the water tank shall be painted grey.

One (1)
25-62-4300

One (1) swivel dump shall be fabricated with .125" aluminum and attached to the Newton Quick Dump.

The swivel dump shall have the ability to dump water from the driver's side or the officer's side and any point in between. The swivel dump is 70 inches long when fully extended. The swivel dump shall have an extension that is hinged and can be folded up when the dump is not in use. The dump shall have the ability to be stowed on either the driver's side or the officer's side of the truck. The latch that holds the extension in the stowed position shall also help support the swivel dump extension.

When the extension is in the down and extended position, there shall be no less than a 34 inch clearance from level ground to the bottom of the dump to ensure that there is enough clearance for the swivel dump to offload into all portable drop tanks.

The dump shall meet NFPA requirements for water delivery on three sides of the vehicle.

One (1)
25-62-4310

CAST HANDLE

A cast handle shall be installed vertically at the end of the lower dump chute. This shall provide a firm gripping handle to reposition the dump chute. The handle shall prevent the tendency to grab the top chute and add undue stress to the hinged in trying to pivot the chute.

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.

Two (2)
29-10-8100

ALUMINUM HOSEBED DIVIDER

Two (2) adjustable hosebed divider constructed of .250" aluminum shall be installed on the apparatus.

Two (2)
29-10-8300

Each hosebed divider installed on the apparatus shall be provided with a hand hole cut-out approximately 3" wide x 8" long.

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)
29-20-5602

The vinyl cover shall be black 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.

One (1)
30-01-2250

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. 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)
30-10-1010

GALVANIZED SUB-FRAME

After fabrication the entire subframe assembly shall be hot dip galvanized to prevent corrosion. 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.

This design maximizes the water and equipment that can be carried on the apparatus. As the amount of equipment and water that can be carried on the apparatus is critical to the effectiveness of the fire fighters, designs that do not utilize this method will not be considered.

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 black rubber fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless steel fasteners.

One (1)
31-01-2105

BODY WIDTH

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

COMPARTMENT DEPTH

The lower portion of the side compartments on the pumper body shall be 26" deep.

One (1)
29-00-1200

HOSEBED WIDTH

The width of the pumper body hosebed shall be 68".

One (1)
32-03-0030

COMPARTMENT HEIGHT

The left side body compartments shall be 30" high.

One (1)
32-03-1030

COMPARTMENT HEIGHT

The right side body compartments shall be 30" high.

Four (4)
30-02-1150

ROLL UP DOOR CONSTRUCTION

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 one (1) manually operated, swing-type manual control located adjacent the intake. The valve shall be equipped with a color-coded name plate.

One (1)
23-05-1300

FRONT BUMPER DISCHARGE & SPRAY BAR

There shall be a 2" discharge line furnished on the front bumper of the chassis. Front discharge shall be supplied with two (2") inch flexible hose with stainless steel fittings and a 2" Akron discharge valve. The discharge valve shall be controlled with a electric on/off controller located in the chassis cab.

The spray bar shall be equipped with two nozzles: one on driver's side, one on passenger's side. The spray bar nozzles shall be individually controlled. The controls for the nozzle valves shall be located in the chassis cab. The nozzles shall have a flow rate of 30GPM at 50 PSI. All spray bar controls shall have identification labels. There shall be an auto drain installed in the supply line to the front spray bar.

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.

Each hosebed shall provide for a minimum capacity of 200 feet of 1-3/4" diameter double jacket hose with nozzle, for hose provided by the fire department. A divider shall be installed to separate the crosslay beds.

SHOP NOTE

add port for future foam capability

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)
23-08-3900

CROSSLAY COVER

A diamond plate hinged forward cover shall be provided for the crosslay compartment with a hold open device. A net shall be provided to secure the crosslays on each side.

Black cargo webbing shall terminate in the bottom of each crosslay hosebed, covering the ends of the hosebed. The webbing shall be permanently attached on the forward side and have velcro and a grab handle at the rear. A velcro retaining strap on both ends shall be provided. It shall be permanently attached on the cab side at the top of the crosslays with a footman's loop.

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

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

The doors shall be ROM brand doors.

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.

Four (4)
30-02-1210

DOOR LOCKS

A cylindrical door lock shall be provided on the roll up door(s). The door lock shall operate a rod mechanism located within the bottom rail of the door that extends into both side rails when locked.

One (1)
32-05-1030

LEFT FRONT COMPARTMENT

There shall be one (1) low compartment located ahead of the rear wheels. The compartment shall

be equipped with a low 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)
45-02-1200

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .125" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.

SHOP NOTE

The shelf shall be rearward of the fixed divider and be fully adjustable inside the compartment

One (1)
45-30-1300

The shelf/tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 1/2" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

One (1)
45-06-1100

500# ROLLOUT TRAY

One (1) EZ-Slide with a weight rating of 500lbs and 100% extension, shall be installed on the apparatus. The EZ-Slide deck height shall be 1.5". The moving assembly shall be constructed of natural finish extruded aluminum. The four-sided tray with handle shall be constructed of 0.125" natural finish smooth aluminum. The rollers shall be tested to three times the EZ-Slide weight rating. The EZ-Slide shall lock fully-open and fully-closed.

Reflective material measuring 1" x 6" shall be installed on each front corner both on the face and side of the tray for firefighter safety.

SHOP NOTE

The slide-out tray shall be floor mounted forward inside the compartment. The tray shall be approximately 40" inches in width.

One (1)
45-30-1300

The shelf/tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 1/2" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

One (1)
45-15-1200

COMPARTMENT DIVIDER

One (1) compartment divider constructed from 3/16" smooth aluminum material shall be installed. The divider shall be bolted in for ease of removal.

SHOP NOTE

The divider shall be bolted rearward of the slide-out tray to allow for an adjustable shelf, rearward of the divider.

One (1)
45-30-1400

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

One (1)
55-01-1150

COMPARTMENT LIGHT

One (1) ROM vertically mounted roll-up compartment LED V3 door light shall be installed on one side of the door opening. The compartment light shall be integrated into the roll-up door track with the light actuation with the door opening.

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

One (1)
55-06-1400

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

One (1)
32-05-1630

LEFT REAR COMPARTMENT

There shall be one (1) low compartment located behind the rear wheels. The compartment shall

be equipped with a low 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)
45-02-1200

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .125" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.

One (1)
45-30-1300

The shelf/tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 1/2" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

One (1)
45-30-1400

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

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

One (1)
55-06-1400

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

One (1)
32-06-1030

RIGHT FRONT COMPARTMENT

There shall be one (1) low compartment located ahead of the rear wheels. The compartment shall be equipped with a low 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)
45-30-1400

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

One (1)
55-01-1150

COMPARTMENT LIGHT

One (1) ROM vertically mounted roll-up compartment LED V3 door light shall be installed on one side of the door opening. The compartment light shall be integrated into the roll-up door track with the light actuation with the door opening.

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

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55-06-1400

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

One (1)
32-06-1630

RIGHT REAR COMPARTMENT

There shall be one (1) low compartment located behind the rear wheels. The compartment shall be equipped with a low 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)
45-02-1200

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .125" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.

One (1)
45-30-1300

The shelf/tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 1/2" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

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45-30-1400

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

One (1)
55-06-1400

The compartment light will be controlled by a magnetic "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)
32-08-0600

REAR COMPARTMENT

There shall be no compartment located on the rear of the body.

One (1)
33-61-1500

REAR STEP - 16" BOLT-ON

A 16" 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)
90-02-1410

EXTERIOR LADDER MOUNTING

Exterior ladder mountings shall be provided for the specified ladders on the side of the apparatus body.

LADDER MOUNT LOCATION

The location of the ladder mounting assembly shall be located on the left hand side of the apparatus body.

One (1)
90-02-5300

EXTERIOR FOLDING ATTIC LADDER MOUNTING

An exterior 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)
90-16-5100

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 on the outside of the apparatus body.

SHOP NOTE

The tubes shall have a notch at the end to allow the pike end to fit into.

One (1)
90-16-6300

PIKE POLE SOURCE

All pike poles shall be provided by the purchaser.

Two (2)
90-25-7100

HARD SUCTION MOUNTING

Two (2) horizontally mounted aluminum hard suction hose tray with velcro straps shall be provided above the left side body compartments.

One (1)
90-25-9115

SUCTION HOSE SOURCE

New suction hose shall be provided by the body builder.

One (1)
90-30-3400

PORTABLE WATER TANK MOUNTING BRACKET

There shall be one (1) fully enclosed folding tank storage carrier provided on the passenger side of the booster tank and above the lower compartments to carry a portable folding tank. The tank carrier shall hold the folding tank in the vertical position for travel, and fold down over the lower body side for loading and unloading. The folding tank carrier shall be fabricated of smooth aluminum painted to match the body side and have polished aluminum treadplate end caps.

There shall be a hinged bracket that is bolted to the top of the lower compartments with rubber stops to prevent the folding tank carrier from touching the body side when in the down position. There shall be a reinforcement plate installed on the compartment top where the folding tank carrier is attached. There shall be two heavy-duty clamps provided to hold the tank in the travel position.

One (1)
90-30-5115

FOLDING TANK SOURCE

New folding tank 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)
44-01-6000

CATWALKS

Aluminum tread plate catwalks shall be installed on the top of the compartments.

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)
38-90-2050

ACCESS LADDER EZ CLIMB - 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)
33-70-2200

HANDRAIL BELOW HOSEBED

One (1) extruded aluminum non-slip handrail, approximately 60" 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)
44-10-1100

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be bolted in-place and removable 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.

SHOP NOTE

8" Round in Diameter & 26" Deep with the door closed.

One (1)
44-10-6000

One (1) 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)
44-10-1100

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be bolted in-place and removable 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.

SHOP NOTE

8" Round in Diameter & 26" Deep with the door closed.

One (1)
44-10-6000

One (1) 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)
44-10-1100

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be bolted in-place and removable 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.

SHOP NOTE

8" Round in Diameter & 26" Deep with the door closed.

One (1)
44-10-6000

One (1) 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)
44-10-1100

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be bolted in-place and removable 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.

SHOP NOTE

8" Round in Diameter & 26" Deep with the door closed.

One (1)
44-10-6000

One (1) 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.

Two (2)

60-25-9610

POWER DISTRIBUTION STRIP

Two (2) 15 amp power distribution strip with four (4) receptacles shall be provided. The strip shall be powered by the chassis shore line power.

SHOP NOTE

1-Inside Chassis Cab & 1-Inside R-1 Forward Wall High As Possible

One (1)

80-22-1504

BODY PAINT PROCESS

Facility Certification

The paint facility shall be in current compliance with 40 CFR (code of federal regulations) part 63 subpart HHHHHH national emission standards for hazardous air pollutants: Paint stripping and miscellaneous surface coating operations at area sources (6H-NESHAP). Spray guns shall also be compliant certified by paint gun manufacturer.

Cab / Module Prep

Prior to assembly, all joints and seams are to be mechanically etched. All welds shall be ground smooth prior to priming. The bare substrate of the module is first cleaned with a strong surface cleaner to remove fabrication and pneumatic tool oils. *The reason? Cleaning the surface prior to sanding prevents oils and contaminants from being imbedded into the substrate.* After sanding process, a mild surface cleaner removes any sanding dust residue along with pneumatic tool oil. A waterborne surface cleaner is available in case substrate was touched with bare hands or skin.

The following steps must be followed in sequence to properly apply paint to the Fire truck cab, chassis or module.

SURFACE PREP

- Clean entire modular body with Sikkens OTO using the two-cloth method, wipe on wet, wipe dry. *Reason: Wiping our surface cleaners on wet, contaminants loosen and float to the top. Those floating contaminants then get wiped off with an absorbent towel.*
- Using an orbital sander, (where polyester filler will be applied) 80-grit is used to provide a mechanical tooth for optimal adhesion. 180-grit is then used surrounding the 80-grit area. Sikkens M600 surface cleaner is then used to remove sanding dust and pneumatic tool oil. If bare hands or skin accidentally touched the surface, Sikkens Autoprep waterborne cleaner is used to remove natural oils. *Again: All surface cleaners are applied wet with one towel and wiped dry with another.*
- Rosenbauer approved polyester body filler is then applied over the 80-grit ground areas to cover the imperfections from welds. When body filler dries, it's first sanded with 80-grit then finish sanded with 180-grit to remove all 80-grit sand scratches. Blow off surface dust using approved air wand.

- After body work has been completed, the rest of the aluminum substrate on module gets sanded with 80-grit sandpaper until the surface is bright and sand scratches are consistent. Module gets blown off again to remove all sanding dust.
- Step 1 is essential in achieving proper adhesion.

EPOXY PRIMER and HIGH BUILD primer surfacer APPLICATION PROCESS:

- First, if sanded aluminum substrate has not been primed within 8 hours, aluminum substrate gets re-abraded to remove oxidation that may have begun on aluminum surface. Aluminum substrate gets cleaned with Sikkens M600 surface cleaner using the 2-towel method. Surface cleaners do not get applied over body filler due to polyester filler being absorbent.
- One (1) coat of AkzoNobel LV262 Epoxy primer is applied. This epoxy primer slows down corrosion from happening if in case the unit (once out in the field) has stone chips or scratches down to aluminum. This product is a 2-component epoxy primer meaning it mixes with a hardener. Paint technicians are trained to properly apply this product to achieve a minimum of 1 mil DFT (Dry film thickness) required by AkzoNobel. A blank module schematic showing specific areas to measure dry film thickness is completed on each module /unit.
- Allow LV262 25 minutes minimum dry time prior to applying AkzoNobel LV650 primer surfacer. Apply two to three wet coats of AkzoNobel LV650 two component low VOC high build primer surfacer. A dry film thickness of up to 8 mils can be achieved prior to sanding. Minimum flash between coats is 30 seconds to 5 minutes. LV650 surfacer dries 3 different ways. 8 hour dry without accelerator, bake for 1 hour at 140-degrees or accelerate which allows technicians to sand in 45 minutes @70-degrees.

SANDING:

- Block sand entire module with 320-grit sandpaper minimizing any accidental cut throughs on edges. Blow off body with air gun and move module into paint booth.

PRE TOPCOAT PREPARATION

- Clean areas where Rosenbauer approved seam sealer is applied with Sikkens M600 surface cleaner. If by accident, bare hands or skin touched surface on cab or module, Autoprep waterborne cleaner is used on these areas prior to using M600 cleaner. Both cleaners are used with the 2-towel method.
- Seam seal with Rosenbauer approved non-shrinking moisture cured urethane seam sealer. Technicians follow seam sealer technical data sheets pertaining to application and dry times prior to applying AkzoNobel BT650 basecoat or 650 Topcoat single stage paint.
- Clean module with M600 surface cleaner. If by accident, bare hands or skin touched surface on module, Autoprep waterborne cleaner is used on these areas prior to using M600 cleaner. Both cleaners are used with the 2-towel method.
- If there are any visible cut throughs, paint techs first use a pre-treatment Alodine wipe followed by one coat of reduced LV262 epoxy primer over these areas and give a 20-minute flash prior to applying BT650 basecoat or Topcoat.
- Tack rag unit to remove any lint or dust that could have landed on surface.

TOPCOAT PROCEDURE

- Mix BT650 basecoat or Topcoat (single stage) polyurethane paint.

- Fluid and spray pattern checks are done prior to applying BT650 base, Topcoat and Clear coat.
- Apply BT650 basecoat until complete coverage is achieved. If Topcoat is applied, a minimum of 1.8 mils is recommended after cut and buff procedure. Note: Topcoat doesn't get clear coated.
- Allow solid color BT650 basecoat to flash 20 minutes prior to applying 3 coats Sikkens LV651 Glamour Clear coat.
- If a metallic color, allow BT650 basecoat to flash 45 minutes prior to applying 3 coats LV651 Glamour Clear coat. Bake body for 45 minutes once surface temp has reached 140-degrees.
- The mil thicknesses are as follows:
- Autocoat BT LV262 Epoxy Primer 1.0 to 1.5 mils
- Autocoat BT LV650 2K Primer Surfacer 1.0 to 3.0 mils
- Autocoat BT LV650 Basecoat color 1.0 to 1.8 mils
- Autocoat LV651 Clearcoat 2.0 to 3.0 mils
- Combined total: 5.0 to 9.3 mils

One (1)
80-06-1100

APPARATUS COLOR

SHOP NOTE

The apparatus shall be white in color to match the chassis.

One (1)
80-30-1100

INTERIOR COMPARTMENT FINISH

Six (6) 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)
80-43-2996

BLACKED OUT ITEMS - LINE-X / PAINT

The following items shall be either blacked out with Line-X or flat black paint.

One (1)

80-44-1400

UNDERCOATING

The entire underside of the single axle apparatus body is to be cleaned and properly prepared for application of a sprayed on automotive type undercoating for added corrosion resistance. Undercoating is to be a solvent based, rubberized coating, black in color.

One (1)
80-50-1200

LETTERING

The purchaser shall supply the apparatus lettering.

One (1)
80-70-1300

CAB AND BODY STRIPE

A straight Scotchlite reflective stripe, 4" minimum 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)
80-75-1100

COLOR OF STRIPING MATERIAL

The color of the 3M brand striping material shall be black.

SHOP NOTE

Verify Color Before Application. Graphics Example Is Required.

One (1)
80-72-1100

CHEVRON STRIPING

The entire rear portion of the body shall have 3M reflective red and yellow 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)
80-79-1000

YELLOW SAFETY TAPE - STANDING & WALKING SURFACES

The apparatus shall be NFPA standard 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)
90-01-5920

WHEEL CHOCKS WITH MOUNTS

A pair of Worden Model HWG large aluminum wheel chocks shall be provided and mounted under the apparatus body with Model U815T underbody mounting brackets.

One (1)
90-03-1300

ROOF LADDER

One (1) Alco-Lite Model PRL-12, 12 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.

Two (2)
90-25-2500

SUCTION HOSE

Two (2) 4.0" 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)
90-30-1300

FOLDING PORTABLE WATER TANK

One (1) 2100 gallon, 22 oz vinyl, portable water tank shall be provided. The tank shall include an aluminum support frame.

One (1)
90-58-1000

DEALER SUPPLIED EQUIPMENT

The following items shall be supplied and installed by the Dealer (General Fire Apparatus):

An Akron #3430 GP Manual monitor (or equal) and direct truck mount adapter shall be installed. The monitor shall be capable of 360-degree rotation and be capable of flowing 1000 GPM when installed on the direct truck mount.

The manual monitor shall be equipped with a built in pressure gauge. The "T" handle manual control provides precise and easy positioning and control.

A gate valve shall be supplied for the apparatus deck gun to allow the monitor to be controlled at the top of the apparatus body.

A set of stacked tips shall be provided for the deck gun.

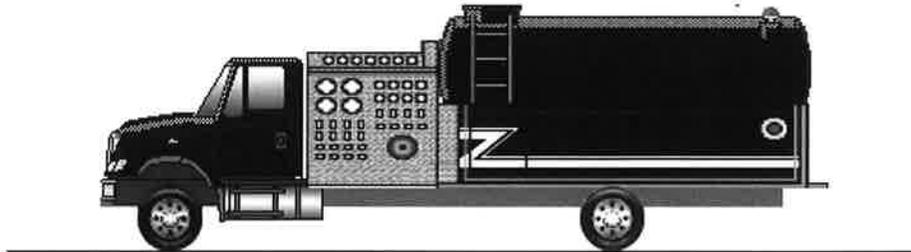
One (1) 5" Female x 2-1/2" male NH adapter shall be supplied.

One (1) 2-1/2" chrome cap shall be supplied.

Prepared For:

Rosenbauer - State of Oregon
RANDY BRUMMEL
P.O BOX 57
Lyons, SD 57041-
(606)543 - 5591
Reference ID: HV607 2-DR 450

Thank you for the opportunity to provide you with the following quotation on a new International truck. I am sure the following detailed specification will meet your operational requirements, and I look forward to serving your business needs.



Model Profile
2024 HV607 SBA (HV607)

AXLE CONFIG:	4X2
APPLICATION:	Tank (Emergency)
MISSION:	Requested GVWR: 57000. Calc. GVWR: 47000. Calc. GCWR: 80000 Calc. Start / Grade Ability: 22.30% / 3.14% @ 55 MPH Calc. Geared Speed: 69.3 MPH
DIMENSION:	Wheelbase: 232.00, CA: 164.90, Axle to Frame: 91.00
ENGINE, DIESEL:	{Cummins L9 450} EPA 2021, 450HP @ 2100 RPM, 1250 lb-ft Torque @ 1200 RPM, 2100 RPM Governed Speed, 450 Peak HP (Max), (RATED FOR EMERGENCY VEHICLES ONLY)
TRANSMISSION, AUTOMATIC:	{Allison 3000 EVS} 5th Generation Controls, Close Ratio, 5-Speed with Overdrive, with PTO Provision, Less Retarder, Includes Oil Level Sensor, Max, GVW N/A
CLUTCH:	Omit Item (Clutch & Control)
AXLE, FRONT NON-DRIVING:	{Meritor MFS-16-143A} Wide Track, I-Beam Type, 16,000-lb Capacity
AXLE, REAR, SINGLE:	{Dana Spicer S30-190} Single Reduction, 31,000-lb Capacity, W Wheel Ends Gear Ratio: 5.25
CAB:	Conventional, Day Cab
TIRE, FRONT:	(2) 315/80R22.5 Load Range L UNISTEEL G291 (GOODYEAR), 491 rev/mile, 68 MPH, All-Position
TIRE, REAR:	(4) 315/80R22.5 Load Range L ENDURANCE TSD (GOODYEAR), 484 rev/mile, 75 MPH, Drive
SUSPENSION, REAR, SINGLE:	31,000-lb Capacity, Vari-Rate Springs, with 4500-lb Capacity Auxiliary Multileaf Springs
FRAME REINFORCEMENT:	Full Outer C-Channel, Heat Treated Alloy Steel (120,000 PSI Yield), 10.813" x 3.892" x 0.312" (274.6mm x 98.8mm x 7.9mm), 480.0" (12192mm) OAL
PAINT:	Cab schematic 209WL Location 1: 2941, Flna3225 (Custom) Location 2: 9408, Off White (Custom) Chassis schematic 932WL Wheel: 2941, Flna3225 (Custom)

(0012ESV)

ATTACHMENTS: 0015WCN 0012VXT 0012THT 0007WZX 0007SDP

<u>Parameter</u>	<u>Value</u>	<u>UOM</u>
Max Accelerator Vehicle Speed	68	MPH
Road Speed Governor Upper Droop	3	MPH
Road Speed Governor Lower Droop	0	MPH
Driver Initiated Override (DIO)	N, DISABLE FEATURE OR FUNCTION	N/A
DIO Maximum Road Speed Delta	3	MPH
DIO Maximum Distance	100	MILES
Max Engine Speed No Veh Speed Sensr	2128	RPM
LBSC Enable	N, DISABLE FEATURE OR FUNCTION	N/A
LBSC - Engine Speed Breakpoint	1800	RPM
Gear Down Protection Enable	N, DISABLE FEATURE OR FUNCTION	N/A
GDP - Heavy Load Vehicle Speed	62	MPH
GDP - Light Load Vehicle Speed	57	MPH
Driver Reward Enable	N, DISABLE FEATURE OR FUNCTION	N/A
Driver Reward Mode	0, ROAD SPEED GOVERNOR	N/A
Fuel Economy - Expected Level	7.00	MPG
Fuel Economy - Good Level	7.25	MPG
Fuel Economy - Best Level	7.50	MPG
% Idle Time - Expected Level	30	%
% Idle Time - Good Level	20	%
% Idle Time - Best Level	10	%
Speed Reward - Expected Level	0	MPH
Speed Reward - Good Level	0	MPH
Speed Reward - Best Level	0	MPH
Speed Reward - Penalty Level	0	MPH
Idle Speed Adjustment Enable	Y, ENABLE FEATURE OR FUNCTION	N/A
Low Idle Speed	750	RPM
Idle Shutdown Enable	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Time Before Shutdown	15.0	MIN
ISD Percent Engine Loading	100	%
ISD In PTO	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Manual Override	N, DISABLE FEATURE OR FUNCTION	N/A
ISD With Parking Brake Set	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Ambient Temperature Override	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Cold Ambient Air Temperature	30	F
ISD Intermediate Ambient Air Temp	40	F
ISD Hot Ambient Air Temperature	81	F
ISD Manual Override Inhibit Zone En	N, DISABLE FEATURE OR FUNCTION	N/A
ISD Hot Ambient Automatic Override	Y	N/A
ISD Engine Coolant Temp Threshold	53	F
Cruise Control Enable	Y, ENABLE FEATURE OR FUNCTION	N/A
CC Maximum Vehicle Speed	68	MPH
CC Save Set Speed	N, DISABLE FEATURE OR FUNCTION	N/A
CC Upper Droop	3.0	MPH
CC Lower Droop	0.0	MPH
CC Auto Resume	N, DISABLE FEATURE OR FUNCTION	N/A
CC Engine Brake Switch Bypass Enable	N, DISABLE FEATURE OR FUNCTION	N/A
Engine Fan Min On Time For AC	30	SEC
Remote Accelerator Enable	N, DISABLE FEATURE OR FUNCTION	N/A
Remote Accelerator Mode	1, REMOTE ACCELERATOR PEDAL OR LEVER WITH TRANS VERIFICATION	N/A
PTO Enable	Y, ENABLE FEATURE OR FUNCTION	N/A
PTO In Cab Mode	Y, ENABLE FEATURE OR FUNCTION	N/A
Remote PTO Enable	N, DISABLE FEATURE OR FUNCTION	N/A
Remote Station PTO Enable	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Max Engine Speed	2200	RPM

PTO Min Engine Speed	750	RPM
PTO Maximum Engine Load	800	LB-FT
PTO Max Vehicle Speed	2	MPH
PTO Accelerator Override	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Accel Override Max Engine Speed	2400	RPM
PTO Clutch Override	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Service Brake Override	Y, ENABLE FEATURE OR FUNCTION	N/A
PTO Parking Brake Interlock Mode	1, PTO PRK BRK INT TYPE SET TO CAB ONLY	N/A
PTO Transmission Neutral Interlock	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Eng Spd Limit w/VSS Limit	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Ignore Vehicle Speed Sensor	N, DISABLE FEATURE OR FUNCTION	N/A
PTO Resume Switch Speed	925	RPM
PTO Set Switch Speed	850	RPM
PTO Additional Switch Speed	950	RPM
PTO Ramp Rate	250	RPM/SEC
Remote PTO Number of Speed Settings	1	N/A
Remote PTO Speed Setting 1	1000	RPM
Remote PTO Speed Setting 2	1200	RPM
Remote PTO Speed Setting 3	1400	RPM
Remote PTO Speed Setting 4	1400	RPM
Remote PTO Speed Setting 5	1500	RPM
Remote Station PTO Resume Sw Spd	1000	RPM
Remote Station PTO Set Switch Speed	1500	RPM
Remote Station PTO Addition Sw Spd	1500	RPM
Transmission Driven PTO	N, DISABLE FEATURE OR FUNCTION	N/A
Transmission Driven PTO Type	0, ENGINE DRIVEN STEADY LOAD	N/A
Powertrain Protection Enable	N, DISABLE FEATURE OR FUNCTION	N/A
Max Torque Allow By Axle/Driveshaft	23602	LB-FT
Max Torque in Top Gear Range	2995	LB-FT
Max Torque in Int. Gear Range	2995	LB-FT
Max Torque in Low Gear Range	2995	LB-FT
Max Torque w/o Vehicle Speed	1475	LB-FT
Lowest Gear of Top Gear Range	2.00	N/A
Lowest Gear of Int. Gear Range	3.00	N/A
Lowest Gear of Low Gear Range	6.00	N/A
Engine Protection Shutdown	Y, ENABLE FEATURE OR FUNCTION	N/A
Engine Protection Restart Inhibit	Y, ENABLE FEATURE OR FUNCTION	N/A
Engine Prot Coolant Level Shutdown	N, DISABLE FEATURE OR FUNCTION	N/A
Sudden Veh Speed Decel Threshold	6.96	MPH
Trip Information Vehicle Ovrsped1	75	MPH
Trip Information Vehicle Ovrsped2	77	MPH
Veh Speed Sensor Anti Tamper Level	1, HIGH LEVEL	N/A
Maintenance Monitor Enable	N, DISABLE FEATURE OR FUNCTION	N/A
Maintenance Monitor Operating Mode	0, MAINTENANCE MONITOR AUTOMATIC MODE OF OPERATION	N/A
Maintenance Monitor Alert Percent	90	%
Maintenance Monitor Distance	15000	MILES
Maintenance Monitor Fuel	2000	GALLONS
Maintenance Monitor Time	500	HOURS
Maintenance Monitor Interval Factor	1.00	N/A
Master Password	000000	N/A
Adjustment Password	000000	N/A
Reset Password	000000	N/A

These Electronic Parameters have been successfully finalized

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
Base Chassis, Model HV607 SBA	6136/3644	9780
AXLE CONFIGURATION		
AXLE CONFIGURATION {Navistar} 4x2	-160/-153	-313
Notes		
: Pricing may change if axle configuration is changed.		
ENGINE		
ENGINE, DIESEL {Cummins L9 450} EPA 2021, 450HP @ 2100 RPM, 1250 lb-ft Torque @ 1200 RPM, 2100 RPM Governed Speed, 450 Peak HP (Max), (RATED FOR EMERGENCY VEHICLES ONLY)	579/-15	564
CARB EMISSION WARR COMPLIANCE Federal, Does Not Comply with CARB Emission Warranty	0/0	0
CARB IDLE COMPLIANCE Federal, Does Not Comply with California Clean Air Idle Regulations	0/0	0
EMISSION, CALENDAR YEAR {Cummins L9} EPA, OBD and GHG Certified for Calendar Year 2022	0/0	0
RADIATOR Aluminum, Cross Flow, Front to Back System, 1469 SqIn, with 1172 SqIn Charge Air Cooler	-48/1	-47
Includes		
: DEAERATION SYSTEM with Surge Tank		
: HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps		
: RADIATOR HOSES Premium, Rubber		
FAN DRIVE {Horton Drivemaster} Two-Speed Type, Direct Drive, with Residual Torque Device for Disengaged Fan Speed	0/0	0
Includes		
: FAN Nylon		
AIR CLEANER Single Element	0/0	0
ANTI-FREEZE Red, Extended Life Coolant; To -40 Degrees F/ -40 Degrees C, Freeze Protection	0/0	0
ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls and Starter Lockout, with Ignition Switch Control, for Cummins B6.7 and L9 Engines	0/0	0
ENGINE WATER COOLER {Sen-Dure} Auxiliary, For Use with Fire Trucks	0/0	0
THROTTLE, HAND CONTROL Engine Speed Control; Electronic, Stationary, Variable Speed; Mounted on Steering Wheel	0/0	0
TRANSMISSION		
TRANSMISSION, AUTOMATIC {Allison 3000 EVS} 5th Generation Controls, Close Ratio, 5-Speed with Overdrive, with PTO Provision, Less Retarder, Includes Oil Level Sensor, Max, GVW N/A	234/49	283
ALLISON SPARE INPUT/OUTPUT for Emergency Vehicle Series (EVS), Fire/Pumper, Tank, Aerial/Ladder, Package Number 198, Includes J1939 Based Auto Neutral	0/0	0
OIL COOLER, AUTO TRANSMISSION {Modine} Water to Oil Type	25/0	25
PTO LOCATION Dual, Customer Intends to Install PTO at Left and/or Right Side of Transmission	0/0	0
SHIFT CONTROL PARAMETERS {Allison} 3000 or 4000 Series Transmissions, Performance Programming	0/0	0
TRANSMISSION OIL Synthetic; 29 thru 42 Pints	0/0	0
TRANSMISSION SHIFT CONTROL Column Mounted Stalk Shifter, Not for Use with Allison 1000 & 2000 Series Transmission	1/0	1

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
CLUTCH		
CLUTCH Omit Item (Clutch & Control)	0/0	0
REAR AXLES, SUSPENSIONS		
AXLE, REAR, SINGLE {Dana Spicer S30-190} Single Reduction, 31,000-lb Capacity, W Wheel Ends . Gear Ratio: 5.25	0/348	348
SUSPENSION, REAR, SINGLE 31,000-lb Capacity, Vari-Rate Springs, with 4500-lb Capacity Auxiliary Multileaf Springs	0/177	177
FRONT AXLES		
AXLE, FRONT NON-DRIVING {Meritor MFS-16-143A} Wide Track, I-Beam Type, 16,000-lb Capacity	148/0	148
FRONT SUSPENSIONS		
SUSPENSION, FRONT, SPRING Parabolic Taper Leaf, Shackle Type, 16,000-lb Capacity, with Shock Absorbers	44/0	44
CABS, COWLS, BODIES		
CAB Conventional, Day Cab	0/0	0
ACCESS, CAB Steel, Driver & Passenger Sides, Two Steps per Door, for use with Day Cab and Extended Cab	0/0	0
AIR CONDITIONER with Integral Heater and Defroster	56/0	56
CAB INTERIOR TRIM Classic, for Day Cab	0/0	0
<u>Includes</u>		
: CONSOLE, OVERHEAD Molded Plastic with Dual Storage Pockets, Retainer Nets and CB Radio Pocket; Located Above Driver and Passenger		
: DOME LIGHT, CAB Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Overhead Console, Center Mounted		
: SUN VISOR (2) Padded Vinyl; 2 Moveable (Front-to-Side) Primary Visors, Driver Side with Toll Ticket Strap		
CAB, INTERIOR TRIM, CLOSEOUT Under IP, Driver Side	0/0	0
CAB MOUNTING HEIGHT EFFECTS High Cab in Lieu of Mid High Cab Mounting (Approx. 4.5")	0/0	0
CAB REAR SUSPENSION Air Bag Type	0/0	0
GAUGE CLUSTER Base Level; English with English Electronic Speedometer	0/0	0
<u>Includes</u>		
: GAUGE CLUSTER DISPLAY: Base Level (3" Monochromatic Display), Premium Level (5" LCD Color Display); Odometer, Voltmeter, Diagnostic Messages, Gear Indicator, Trip Odometer, Total Engine Hours, Trip Hours, MPG, Distance to Empty/Refill for		
: GAUGE CLUSTER Speedometer, Tachometer, Engine Coolant Temp, Fuel Gauge, DEF Gauge, Oil Pressure Gauge, Primary and Secondary Air Pressure		
: WARNING SYSTEM Low Fuel, Low DEF, Low Oil Pressure, High Engine Coolant Temp, Low Battery Voltage (Visual and Audible), Low Air Pressure (Primary and Secondary)		
GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} with Black Bezel, Mounted in Instrument Panel	2/0	2
GAUGE, OIL TEMP, AUTO TRANS for Allison Transmission	1/0	1
GRAB HANDLE, EXTERIOR (2) Chrome, Towel Bar Type, with Anti-Slip Rubber Inserts, for Cab Entry Mounted Left and Right Side at B-Pillar	6/0	6

<u>Description</u>	<u>F/R Wt</u>	<u>Tot Wt</u>
	(lbs)	(lbs)
GRAB HANDLE, CAB INTERIOR (2) Safety Yellow	0/0	0
INSTRUMENT PANEL Flat Panel	0/0	0
IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	0/0	0
MIRRORS (2) C-Loop, Power Adjust, Heated, LED Clearance Lights, Bright Heads and Arms, 7.5" x 14" Flat Glass, Includes 7.5" x 7" Convex Mirrors, for 102" Load Width	0/0	0
<u>Notes</u>		
: Mirror Dimensions are Rounded to the Nearest 0.5"		
SEAT BELT All Red; 1 to 3	0/0	0
SEAT, DRIVER {H.O. Bostrom Sierra Air 100} NFPA Compliant, Air Suspension, High Back, Vinyl with Covered Back and International Logo on Headrest, for Fire Truck	-4/-1	-5
SEAT, PASSENGER {H.O. Bostrom Sierra Air 100} NFPA Compliant, Air Suspension, High Back, Vinyl with Covered Back, International Logo on Headrest, for Fire Truck	84/22	106
SEATBELT WARNING PREWIRE Includes Seat Belt Switches and Seat Sensors for all Belted Positions in the Cab and a Harness Routed to the Center of the Dash for the Aftermarket Installation of the Data Recorder and Seatbelt Indicator Systems, for 1 to 3 Seat Belts	0/0	0
WINDOW, MANUAL (2) and Manual Door Locks, Left and Right Doors	0/0	0
<u>FRAMES</u>		
FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.125" x 3.580" x 0.312" (257.2mm x 90.9mm x 8.0mm); 480.0" (12192) Maximum OAL	73/396	469
FRAME REINFORCEMENT Full Outer C-Channel, Heat Treated Alloy Steel (120,000 PSI Yield), 10.813" x 3.892" x 0.312" (274.6mm x 98.8mm x 7.9mm), 480.0" (12192mm) OAL	446/703	1149
BUMPER, FRONT Contoured, Stainless Steel, Polished	-21/3	-18
CROSSMEMBER, REAR, AF (1)	-4/24	20
FRAME, SPECIAL EFFECTS Dimple on Left and Right Top Flange of Frame Rail to Reference Rear Axle Centerline	0/0	0
WHEELBASE RANGE 189" (480cm) Through and Including 256" (650cm)	2711-271	0
<u>BRAKES</u>		
BRAKE SYSTEM, AIR Dual System for Straight Truck Applications	0/0	0
<u>Includes</u>		
: BRAKE LINES Color and Size Coded Nylon		
: DRAIN VALVE Twist-Type		
: GAUGE, AIR PRESSURE (2) Air 1 and Air 2 Gauges; Located in Instrument Cluster		
: PARKING BRAKE CONTROL Yellow Knob, Located on Instrument Panel		
: PARKING BRAKE VALVE For Truck		
: QUICK RELEASE VALVE On Rear Axle for Spring Brake Release: 1 for 4x2, 2 for 6x4		
: SPRING BRAKE MODULATOR VALVE R-7 for 4x2, SR-7 with relay valve for 6x4/8x6		
AIR BRAKE ABS {Bendix AntiLock Brake System} 4-Channel (4 Sensor/4 Modulator) Full Vehicle Wheel Control System, with Automatic Traction Control	0/0	0
BRAKES, FRONT {Meritor 16.5X6 Q-PLUS CAST} Air S-Cam Type, Cast Spider, Fabricated Shoe, Double Anchor Pin, Size 16.5" X 6", 20,000-lb Capacity	33/0	33
BRAKE CHAMBERS, FRONT AXLE {Bendix} 24 Sqli	4/0	4

<u>Description</u>	<u>F/R Wt</u>	<u>Tot Wt</u>
	(lbs)	(lbs)
SLACK ADJUSTERS, FRONT {Haldex} Automatic	14/0	14
DUST SHIELDS, FRONT BRAKE for Air Cam Brakes	10/0	10
BRAKES, REAR {Meritor 16.5X7 P} Air S-Cam Type, Cast Spider, Cast Shoe, Double Anchor Pin, Includes Greaseable and Zinc Coated Anchor Pins, Size 16.5" X 7", 38,000-lb Capacity per Axle	0/106	106
BRAKE CHAMBERS, REAR AXLE {Bendix EverSure} 36/36 Sqn Spring Brake	0/23	23
SLACK ADJUSTERS, REAR {Haldex} Automatic	0/16	16
DUST SHIELDS, REAR BRAKE for Air Cam Brakes	0/10	10
AIR COMPRESSOR {Cummins} 18.7 CFM	0/0	0
AIR DRYER {Bendix AD-9} with Heater	20/8	28
AIR DRYER LOCATION Mounted Inside Left Rail, Back of Cab	15/6	21
AIR TANK LOCATION (2) : One Mounted Under Each Rail, Front of Rear Suspension, Parallel to Rail	-23/42	19
DRAIN VALVE {Bendix DV-2} Automatic, with Heater, for Air Tank	1/0	1

STEERING

STEERING GEAR (2) {Sheppard M100/M80} Dual Power	101/-5	96
STEERING COLUMN Tilting and Telescoping	18/1	19
STEERING WHEEL 4-Spoke; 18" Dia., Black	0/0	0

DRIVELINES

DRIVELINE SYSTEM {Dana Spicer} SPL170, for 4x2/6x2	6/32	38
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EXHAUST SYSTEMS

EXHAUST SYSTEM Horizontal Aftertreatment System, Frame Mounted Right Side Under Cab, for Single Short Horizontal Tail Pipe, Frame Mounted Right Side Back of Cab	58/-3	55
AFTERTREATMENT COVER Steel, Black	11/2	13
ENGINE COMPRESSION BRAKE {Jacobs} for Cummins ISL/L9 Engines; with Selector Switch and On/Off Switch	44/4	48
SWITCH, FOR EXHAUST 3 Position, Momentary, Lighted Momentary, ON/CANCEL, Center Stable, INHIBIT REGEN, Mounted in IP Inhibits Diesel Particulate Filter Regeneration When Switch is Moved to ON While Engine is Running, Resets When Ignition is Turned OFF	2/0	2
TAIL PIPE (1) Horizontal, Short, Exits Right Side, 90 Degree Turnout	16/7	23

ELECTRICAL SYSTEMS

ELECTRICAL SYSTEM 12-Volt, Standard Equipment	0/0	0
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Includes

- : DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab
- : HAZARD SWITCH Push On/Push Off, Located on Instrument Panel to Right of Steering Wheel
- : HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever
- : PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light
- : STARTER SWITCH Electric, Key Operated
- : STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
: TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature		
: WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever		
: WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted		
: WIRING, CHASSIS Color Coded and Continuously Numbered		
ALTERNATOR {Leece-Neville BLP4006HN} Brushless, 12 Volt, 325 Amp Capacity, Pad Mount, with Remote Sense	17/0	17
ANTENNA for Increased Roof Clearance Applications	1/0	1
BATTERY BOX Steel, with Aluminum Cover, 14" Wide, 2-3 Battery Capacity, Mounted Left Side Under Cab	-11/5	-6
BATTERY DISCONNECT SWITCH for Cab Power Disconnect Switch, Disconnects Power to Power Distribution Center (PDC) and Body Builder Through Solenoid, Does Not Disconnect Charging Circuits, Locks with Padlock, Cab Mounted	0/0	0
BATTERY SYSTEM {Fleetrite} Maintenance-Free, (3) 12-Volt 1980CCA Total, Top Threaded Stud	33/20	53
BODY BUILDER WIRING Back of Day Cab at Left Frame or Under Sleeper, Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn	2/0	2
CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III with Trip Indicators, Replaces All Fuses	0/0	0
CIGAR LIGHTER Includes Ash Cup	1/0	1
CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	0/0	0
DATA RECORDER Includes Display Mounted in Overhead Console	2/0	2
HEADLIGHTS Halogen	0/0	0
HORN, AIR Single Trumpet, Black, with Lanyard Pull Cord	3/0	3
HORN, ELECTRIC (2) Disc Style	1/0	1
IGNITION SWITCH Keyless	2/0	2
INDICATOR, BATTERY WARNING Green BATTERY ON Indicator, Mounted on Left Side of Instrument Panel, To be Used with Factory Installed or Customer Mounted Battery Disconnect Switch	1/0	1
INDICATOR, LOW COOLANT LEVEL with Audible Alarm	0/0	0
POWER SOURCE Cigar Type Receptacle without Plug and Cord	1/0	1
POWER SOURCE, ADDITIONAL Auxiliary Power Outlet (APO) with USB Port, Located in the Instrument Panel	1/0	1
POWER SOURCE, TERMINAL TYPE 2-Post	1/0	1
RADIO AM/FM/WB/Clock/USB Input/Auxiliary Input	3/0	3
SPEAKERS (2) 6.5" Dual Cone Mounted in Both Doors, (2) 5.25" Dual Cone Mounted in Both B-Pillars	6/2	8
STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt, Less Thermal Over-Crank Protection	8/0	8
TEST EXTERIOR LIGHTS Pre-Trip Inspection will Cycle all Exterior Lamps Except Back-up Lights	0/0	0
TURN SIGNALS, FRONT Includes LED Side Turn Lights Mounted on Fender	0/0	0
FRONT END		
FRONT END Tilting, Fiberglass, with Three Piece Construction, for WorkStar/HV	0/0	0
FENDER EXTENSIONS Rubber	6/0	6

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
GRILLE Stationary, Chrome	0/0	0
GRILLE EMBER SCREEN Mounted to Grille and Cowl Tray to Keep Hot Embers out of Engine and HVAC Air Intake System	3/0	3
INSULATION, SPLASH PANELS for Sound Abatement	2/0	2
LOGOS EXTERIOR Model Badges, Shipped Loose, Located in Cab	0/0	0
LOGOS EXTERIOR, ENGINE Badge Shipped Loose	0/0	0

SPEEDOMETER, TOOLS, MISC

COMMUNICATIONS MODULE Telematics Device with Over the Air Programming; Includes Five Year Data Plan and International 360	1/0	1
KEYS - ALL ALIKE, ID I-1003 Compatible with Z-001	0/0	0
PAINT IDENTITY, PT-2 Single Color, Instruction No. 932. Wheels	0/0	0
PAINT SCHEMATIC, PT-1 Two Tone, Design 209.	0/0	0
PAINT TYPE Base Coat/Clear Coat, 1-2 Tone	0/0	0
PROMOTIONAL PACKAGE Government Silver Package	0/0	0
PAINT CLASS Single Custom Color	0/0	0

FUEL TANKS

FUEL TANK Top Draw, Non-Polished Aluminum, 24" Dia, 50 US Gal (189L), Mounted Left Side, Under Cab	31/3	34
DEF TANK 5 US Gal (19L) Capacity, Frame Mounted Outside Left Rail, Under Cab	3/14	17
FUEL COOLER Less Thermostat; Mounted in Front of Cooling Module	14/0	14
FUEL/WATER SEPARATOR {Racor 400 Series} 12 VDC Electric Heater, Includes Pre-Heater, with Primer Pump, Includes Water-in-Fuel Sensor, Mounted on Engine	-2/-3	-5

WHEELS, TIRES - FRONT

WHEELS, FRONT {Accuride 29300} DISC; 22.5x9.00 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs	72/0	72
(2) TIRE, FRONT 315/80R22.5 Load Range L UNISTEEL G291 (GOODYEAR), 491 rev/mile, 68 MPH, All-Position	24/0	24

WHEELS, TIRES - REAR

WHEELS, REAR {Accuride 29300} DUAL DISC; 22.5x9.00 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs	0/144	144
(4) TIRE, REAR 315/80R22.5 Load Range L ENDURANCE TSD (GOODYEAR), 484 rev/mile, 75 MPH, Drive	0/136	136

BODY INTEGRATION

BDY INTG, I/O EXP HARNESS {for Diamond Logic Builder} In-Cab wire harness (DLB) program only, Includes a harness with five blunt cut wires routed on lower left of instrument panel. Two ground active inputs and two (.5Amp) relay drivers outputs are provided	0/0	0
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Cab schematic 209WL

Location 1: 2941, Flna3225 (Custom)

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
Location 2: 9408, Off White (Custom)		
Chassis schematic 932WL		
Wheel: 2941, Fina3225 (Custom)		

Services Section:

WARRANTY

WARRANTY Standard for HV507, HV50B, HV607 Models, Effective with Vehicles Built July 1, 2017 or Later, CTS-2025A	0/0	0
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Total Component Weight: 8425/5497 13922

Body/Allied Equipment

<u>Description</u>	<u>F/R Wt</u>	<u>Tot Wt</u>
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Goods Purchased

<u>Description</u>	<u>F/R Wt</u>	<u>Tot Wt</u>
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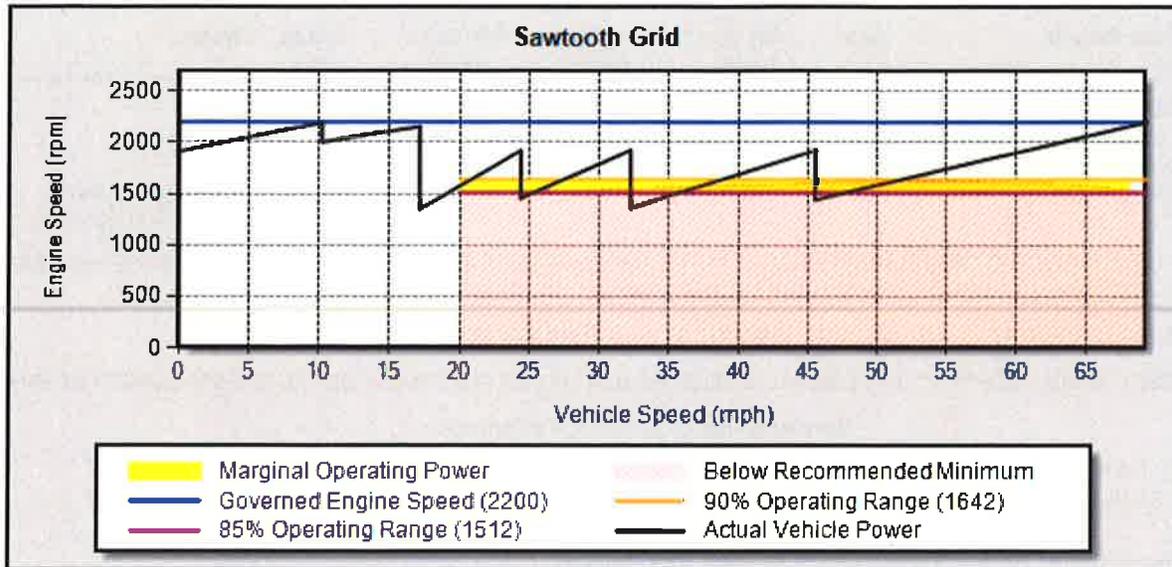
EXHAUST EXTENSION TO EXIT IN FRONT OF THE RIGHT REAR WHEELS	0/0	0
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PDI & SPECIAL PROGRAMMING	0/0	0
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Total Goods Purchased:	0/0	0
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The weight calculations included in this proposal are an estimate of future vehicle weight. The actual weight as manufactured may be different from the estimated weight. Navistar, Inc. shall not be liable for any consequences resulting from any differences between the estimated weight of a vehicle and the actual weight.

ENGINE/TRANSMISSION MATCHING



Sawtooth Details

Gear	Trans Ratio	Upshift Power Avail		Govern Power Avail		Peak Power Comparison			Warn Msg
		Veh Spd (MPH)	Eng Spd (RPM)	Veh Spd (MPH)	Eng Spd (RPM)	Gear Step (%)	85% Range (%)	90% Range (%)	
1C	3.49	0.0	1913	10.2	2195	N/A	46	34	
2C	1.86	10.2	2006	17.1	2154	N/A	46	34	
2L	1.86	17.1	1347	24.4	1921	N/A	46	34	
3L	1.41	24.4	1457	32.3	1926	N/A	46	34	
4L	1.00	32.3	1366	45.5	1925	N/A	46	34	
5L	0.75	45.5	1444	69.3	2200	N/A	46	34	

STEADY STATE PERFORMANCE

Performance Results	Gear	Veh Spd (mph)	Eng Spd (rpm)	Fuel Econ (mpg)	Grade (%)	Notes
LEVEL ROAD MAXIMUM SPEED	5L	72.4	2300	6.12	0.00	
HI GEAR SPEED @ RATED RPM	5L	69.3	2200	6.25	1.97	
55.0 MPH STEADY-STATE	5L	55.0	1747	7.89	3.14	
TYPICAL OPERATING SPEED	5L	60.0	1906	7.28	2.88	- Calculated Grade Ability/Fuel Economy

VEHICLE ORDER CODING ERRORS MAY RESULT IF THE "LEVEL ROAD MAX SPEED" VALUE EXCEEDS THE "HI GEAR SPEED @ RATED RPM" AND IS USED AS THE ENGINE PROGRAMMABLE VEHICLE SPEED LIMIT.

IF THE RESULTS CONTAIN "----", VEHICLE CANNOT ATTAIN THAT SPEED.

IF THE RESULTS CONTAIN "*****", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

Recommendations / General Information

IDLE FUEL RATE : 0.97 GALS/HR @ 700.0 RPM
TORQUE CONVERTER : TC-421 STALL RATIO: 1.77

Fuel Economy Route: Normal Route - City, Suburban, and Highway

Key Fuel Economy Information	City	Suburban	Highway	Notes
MILES PER GALLON	5.04	7.55	7.52	
AVERAGE MPH	19.0	39.8	54.6	
MISSION MINUTES	29.82	51.98	173.35	

IF THE RESULTS CONTAIN "*****", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

GRADEABILITY PERFORMANCE

Enroute - Full Throttle Upshift Performance

Gear	Trans Ratio	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Notes Msg
1C	3.49	0.0	1913	0.00	37.92	STALL
		7.0	2075	284.20	26.82	70% EFF
		9.3	2160	317.08	22.30	80% EFF
		10.2	2195	319.05	20.31	
2C	1.86	10.2	2006	238.80	14.86	
		17.1	2154	317.55	11.49	
2L	1.86	17.1	1347	292.60	10.51	
		24.4	1921	400.73	9.99	
3L	1.41	24.4	1457	316.53	7.69	
		32.3	1926	400.68	7.24	
4L	1.00	32.3	1366	297.66	5.12	
		45.5	1925	401.33	4.66	
5L	0.75	45.5	1444	310.41	3.34	
		69.3	2200	385.82	1.97	RATED RPM
		70.8	2249	294.89	1.00	
		71.6	2275	245.32	0.50	
		72.4	2300	196.22	0.00	LEVEL ROAD

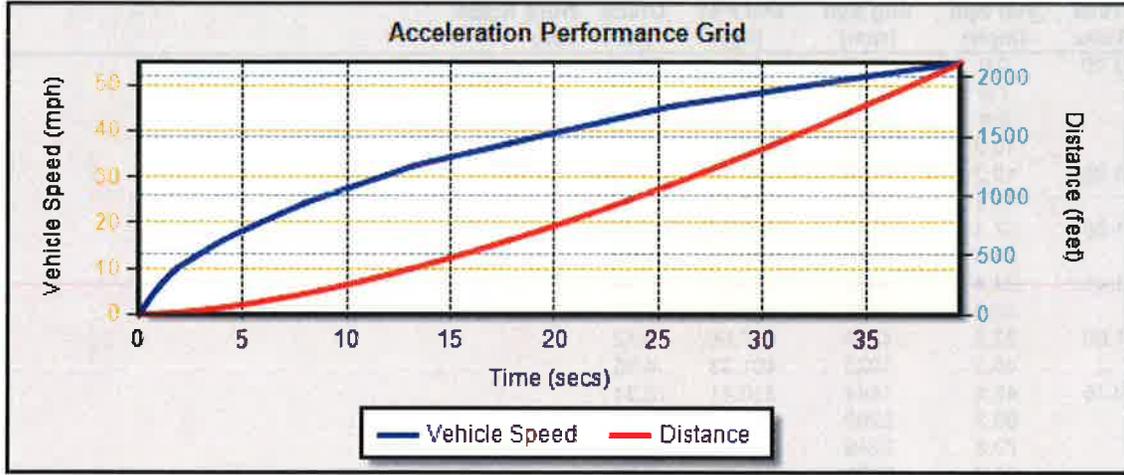
STARTING / TOP GEAR PERFORMANCE

Gear	Trans Ratio	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Notes Msg
1C	3.49	0.0		0.00	37.92	STALL
		9.3		317.08	22.30	80% EFF - Calculated Start Ability

THE TRANSMISSION WAS SIMULATED IN PERFORMANCE OPERATING MODE.

ACCELERATION PERFORMANCE RESULTS

Acceleration Performance Grid



Acceleration Performance: TIME TO ACCELERATE ON A GRADE TO 55.0 (MPH) IS 39.57 (SECS)

Acceleration Performance Details

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
1C	0.18	0.1	1.0	
	0.34	0.5	2.0	
	0.48	1.0	3.0	
	0.64	1.8	4.0	
	0.81	2.9	5.0	
	0.99	4.4	6.0	
	1.18	6.2	7.0	
	1.39	8.5	8.0	
	1.61	11.3	9.0	
	1.86	14.7	10.0	
2C	1.90	15.3	10.2	
	2.25	20.8	11.2	
	2.60	26.8	12.2	
	2.95	33.3	13.2	
	3.32	40.6	14.2	
	3.69	48.7	15.2	
	4.08	57.7	16.2	
2L	4.47	67.1	17.1	
	4.96	79.7	18.1	
	5.45	93.0	19.1	
	5.94	107.1	20.1	
	6.42	121.9	21.1	
	6.91	137.4	22.1	
	7.41	153.6	23.1	
3L	7.90	170.9	24.1	
	8.06	176.3	24.4	
	8.69	199.6	25.4	
	9.33	223.9	26.4	
	9.98	249.2	27.4	
	10.62	275.5	28.4	
	11.26	302.7	29.4	
	11.91	331.0	30.4	

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
	12.56	360.4	31.4	
4L	13.13	387.3	32.3	
	14.06	432.1	33.3	
	15.00	478.4	34.3	
	15.94	526.2	35.3	
	16.88	575.5	36.3	
	17.82	626.3	37.3	
	18.77	678.7	38.3	
	19.71	732.6	39.3	
	20.67	788.1	40.3	
	21.62	845.2	41.3	
	22.58	903.9	42.3	
	23.54	964.2	43.3	
	24.52	1026.7	44.3	
	25.52	1092.4	45.3	
5L	25.72	1106.0	45.5	
	27.13	1201.3	46.5	
	28.56	1299.2	47.5	
	29.99	1399.7	48.5	
	31.42	1503.0	49.5	
	32.87	1609.1	50.5	
	34.33	1718.0	51.5	
	35.80	1829.7	52.5	
	37.27	1944.4	53.5	
	38.76	2062.1	54.5	
	39.57	2127.5	55.0	

REQUIRED TCAPE INFORMATION

TCAPE Factors For Vehicle

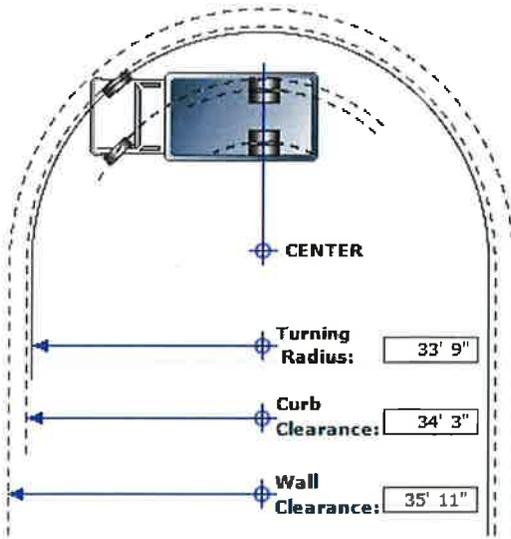
Selected Rear Axle Gear Ratio(s):	5.25
Engine Fan Type:	VISCOUS
Parked PTO:	NO
Enroute PTO:	NO
ID Wheel Slip Conditions:	Yes
Road Governor/Cruise Ctrl:	No
Road Surface Type:	TYPICAL
Fuel Economy Route:	Normal Route - City, Suburban, and Highway
Vehicle Vocation:	MODERATE ON/OFF HIGHWAY
Acceleration Grade (%):	0.0
Frontal Area (FT ²):	76
Speed Limit on Route (MPH):	61.0
Relative Drag Coefficient:	85
Alternator (A):	40
Steering Gear (HP):	2.60
Air Conditioner (HP):	3.20
Vehicle Width (IN):	96
Vehicle Height (IN):	110
Weight on Drive Axle (LBF):	31000
Acceleration Vehicle Spd (MPH):	55.0
Air Compressor (HP):	2.20
TIRE, FRONT	2 - RADIAL LOWPROFILE
TIRE, REAR	4 - RADIAL LOWPROFILE

Components

0001ANA	AXLE CONFIGURATION {Navistar} 4x2
0002ARU	AXLE, FRONT NON-DRIVING {Meritor MFS-16-143A} Wide Track, I-Beam Type, 16,000-lb Capacity
0004SPA	AIR COMPRESSOR {Cummins} 18.7 CFM
0005PTB	STEERING GEAR (2) {Sheppard M100/M80} Dual Power
0008GXX	ALTERNATOR {Leece-Neville BLP4006HN} Brushless, 12 Volt, 325 Amp Capacity, Pad Mount, with Remote Sense
0012ESV	ENGINE, DIESEL {Cummins L9 450} EPA 2021, 450HP @ 2100 RPM, 1250 lb-ft Torque @ 1200 RPM, 2100 RPM Governed Speed, 450 Peak HP (Max), (RATED FOR EMERGENCY VEHICLES ONLY)
0012THT	FAN DRIVE {Horton Drivemaster} Two-Speed Type, Direct Drive, with Residual Torque Device for Disengaged Fan Speed
0013AUL	TRANSMISSION, AUTOMATIC {Allison 3000 EVS} 5th Generation Controls, Close Ratio, 5-Speed with Overdrive, with PTO Provision, Less Retarder, Includes Oil Level Sensor, Max, GVW N/A
0014AJY	AXLE, REAR, SINGLE {Dana Spicer S30-190} Single Reduction, 31,000-lb Capacity, W Wheel Ends
0016030	CAB Conventional, Day Cab
0016BAM	AIR CONDITIONER with Integral Heater and Defroster
07772540190	TIRE, FRONT 315/80R22.5 Load Range L UNISTEEL G291 (GOODYEAR), 491 rev/mile, 68 MPH, All-Position 315/80R22.5 Load Range L UNISTEEL G291 (GOODYEAR), 491 rev/mile, 68 MPH, All-Position
07772548138	TIRE, REAR 315/80R22.5 Load Range L ENDURANCE TSD (GOODYEAR), 484 rev/mile, 75 MPH, Drive 315/80R22.5 Load Range L ENDURANCE TSD (GOODYEAR), 484 rev/mile, 75 MPH, Drive

TCAPE HAS BEEN DESIGNED TO GIVE ECONOMY AND PERFORMANCE PREDICTIONS WHICH HAVE BEEN SHOWN TO BE TYPICAL FOR MOST OPERATIONS. HOWEVER, DUE TO OPERATING CONDITIONS, DRIVER INFLUENCES, AND OTHER FACTORS, YOUR RESULTS MAY VARY FROM THOSE PREDICTED. ALSO, BECAUSE OF FUEL MAPPING PROCEDURES USED BY VARIOUS ENGINE MANUFACTURERS, COMPARISONS OF FUEL ECONOMY RESULTS FOR DIFFERENT BRANDS OF ENGINES MAY VARY FROM THOSE SHOWN.

NAVISTAR, INC. SHALL NOT BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE, INTERRUPTION OF BUSINESS OR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND THAT ARE INCURRED BY DEALER OR BY DEALER'S CUSTOMERS AS A RESULT OF RELIANCE ON TCAPE, WHETHER THE CLAIM IS IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.



Series: HV
 Model: HV607
 Description: HV607 SBA
 Model Year: 2024

Calculation Factors

Wheelbase: 232
 Front Axle: 0002ARU
 Description: AXLE, FRONT NON-DRIVING, {Meritor MFS-16-143A} Wide Track, I-Beam Type, 16,000-lb Capacity
 Front Wheel: 0027DUL
 Description: WHEELS, FRONT, {Accuride 29300} DISC; 22.5x9.00 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs
 Front Tire: 07772540190
 Description: TIRES, 315/80R22.5 Load Range L UNISTEEL G291 (GOODYEAR), 491 rev/mile, 68 MPH, All-Position
 Steering Gear: 0005PTB
 Description: STEERING GEAR, (2) {Sheppard M100/M80} Dual Power

Turning Radius Statistics

General Information

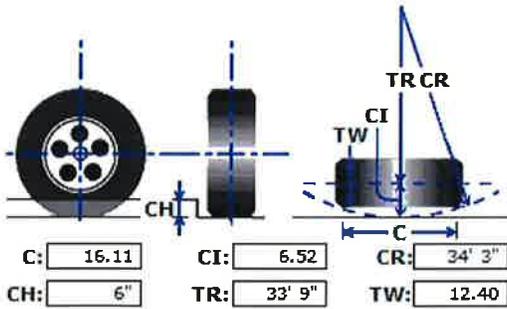
Inside Turn Angle: 43 Degrees
 Radial Overhang: 26

Axle Information

KingPin Inclination: 6.25 Degrees
 KingPin Center: 71.5

Turning Radius - Curb View

C - Curb Contact Length: 16.11
 CI - Curb Clearance Increment: 6.52
 CR - Curb Clearance Radius: 34'3"
 CH - Curb Height: 6"
 TR - Turning Radius: 33'9"
 TW - Tire Width: 12.40



* All Measurements are in inches, unless otherwise specified.

This information is based on engineering information available at this time. Actual figures may vary. Navistar, Inc. cannot accept liability for consequences due to this variance.

GVWR Component Rating(s)

Ratings	Primary			Adjusted By			GAWR* (lbf)	GVWR** (lbf)
	ATA Class	Feature	Rating (lbf)	ATA Class	Feature	Rating (lbf)		
Front Component Ratings	AXLE, FRONT NON-DRIVING	0002ARU	16000					
	BRAKES, FRONT	0004XDT	20000					
	SUSPENSION, FRONT, SPRING	0003ADE	16000					
	WHEELS, FRONT	0027DUL	20000	TIRE, FRONT	0777254	18180		
Front GAWR							16000	
Rear Component Ratings	BRAKES, REAR	0004XCZ	38000					
	BRAKE SYSTEM, AIR	0004091	23000	BRAKES, REAR	0004XCZ	38000		
	SUSPENSION, REAR, SINGLE	0014SAL	31000					
	WHEELS, REAR	0028DUL	36360	TIRE, REAR	0777254	31000		
	AXLE, REAR, SINGLE	0014AJY	31000					
Rear GAWR							31000	
Overall Vehicle Limitations	TRANSMISSION, AUTOMATIC	0013AUL	80000					
GVWR Based on Axle Ratings***								47000
Calculated GVWR								47000

GCWR Component Rating(s)

Ratings	Primary			Adjusted By			GCWR**** (lbf)
	ATA Class	Feature	Rating (lbf)	ATA Class	Feature	Rating (lbf)	
GCWR Component Rating	TRANSMISSION, AUTOMATIC	0013AUL	80000				
	ENGINE, DIESEL	0012ESV	80000				
	AXLE, REAR, SINGLE	0014AJY	125000				
Calculated GCWR							80000

* GAWR (Gross Axle Weight Rating) is the rating capacity of an axle system which include wheels, tires, axles, brakes, springs, and suspensions.
 ** GVWR (Gross Vehicle Weight Rating) is the maximum amount that a loaded vehicle can weight.
 *** GVWR Based on Axle Ratings = Front GAWR + Rear GAWR. Overall vehicle weight limitations are not taken into account.
 **** GCWR (Gross Combined Weight Rating) is the maximum weight of a tractor and trailer.