



GOLDEN STATE

FIRE APPARATUS

PROPOSAL PREPARED FOR
Contra Costa County Fire District
Pierce Manufacturing, Inc.
105' Velocity Ladder Truck
HGAC FS12-17, Product Code TA06
November 2, 2017

SALES CONSULTANT
Ryan Wright
Golden State Fire Apparatus, Inc.
7400 Reese Road
Sacramento, CA 95828
916.330.1638 Office
916.613.3809 Cell
ryan@goldenstatefire.com

PARTS, SERVICE & SUPPORT
Golden State Emergency Vehicle Service, Inc.
7400 Reese Road
Sacramento, CA 95828
916.330.1638 Office
parts@goldenstatefire.com



FIRE APPARATUS

www.goldenstatefire.com



PROPOSAL PREPARED FOR:

Contra Costa County Fire District
2010 Geary Road
Pleasant Hill, CA 94523

Submitted Date:	November 2, 2017
Proposal Number:	91102-17A
Expiration Date:	January 31, 2018
Sales Consultant:	Ryan Wright

We hereby propose and agree to furnish, after your acceptance of this proposal and the proper execution by the CONTRA COSTA COUNTY FIRE DISTRICT, hereinafter called "Customer" and an officer of Golden State Fire Apparatus, Inc., hereinafter called "GSFA", the following fire apparatus and equipment, hereinafter called "Product":

1	Description	QTY	Unit Price
A	One (1) Pierce Manufacturing, Inc. 105' Velocity Ladder Truck	1	1,150,624.00
B	Discount for HGAC contract FS12-17, Product Code TA06	1	(64,874.00)
C	Discount For 100% Pre-Payment at Time of Order	1	(44,737.00)
SUBTOTAL			1,041,013.00
State Sales Tax @ 8.75%			91,088.64
GRAND TOTAL			1,132,101.64



PROPOSAL SUMMARY

This proposal includes the following items in accordance with the specifications hereto attached:

- Fire apparatus and equipment
- 100% performance bond
- Factory final inspection trip
- Factory midpoint inspection trip
- Pre-delivery inspection/services by GSFA
- Delivery to GSFA service center in Sacramento
- Final delivery from service center to Customer
- Demonstration and familiarization of the Product
- California Tire Fee

PRODUCT COMPLETION

Product shall be built in accordance with the specifications hereto attached, delays due to acts of God, strikes, war, or intentional conflict, failures to obtain chassis, materials, unusual weather conditions or other causes beyond GSFA's control not preventing, within approximately **395 CALENDAR DAYS** after receipt of this order and the acceptance thereof at our Sacramento, California office. Within thirty (30) calendar days after receipt of this order and acceptance thereof, GSFA shall submit to Customer a production schedule including tentative pre-construction conference, final inspection and final delivery dates.

DELIVERY LOCATION

Product shall be shipped in accordance with the specifications hereto attached and be delivered to you at **CONCORD, CALIFORNIA**. Proof of insurance must be demonstrated by the Customer to GSFA prior to transferring of the Product(s).

TERMS AND CONDITIONS

1. Payment Terms, 100% Pre-Payment at Time of Order – If applicable, Customer shall pay the Grand Total within fifteen (15) calendar days of date on invoice to GSFA. Proposed delivery timeframe for the Product shall not begin until full payment is received. If payment is late, a daily finance charge of \$250.00 may be added to the final invoice until such payment is received. If payment is not made, \$44,737.00 plus state sales tax shall be added to the final invoice and due GSFA at time of delivery. Due to insurance liability, the Product(s) will not be left at the Customer's location without full acceptance and payment or prior written agreement between the Customer and GSFA.

2. Multiple Unit Purchase – If applicable, for any multiple unit purchase the Grand Total pricing is only valid if the quantity of Products being proposed are purchased at the same time, on the same Purchase Order (PO) or signed contract.

3. State Sales Tax – A sale occurs when the Customer takes title to or possession of an item (not when payment is received by GSFA). Consequently, this proposal is subject to the applicable state sales tax rate in effect when the Product is delivered to the Customer per the delivery terms. Customer is responsible for payment of any additional taxes required, likewise Customer is entitled to a refund if the tax rate is lowered!

4. Purchase Orders – If the Customer elects to issue a Purchase Order (PO) it shall be made out to: Golden State Fire Apparatus, Inc. – 7400 Reese Road – Sacramento, CA 95828.

5. Proposal Expiration – Unless accepted by the expiration date above, GSFA reserves the right to withdraw this proposal.

6. Cancellation/Termination – In the event this proposal is accepted and a signed Purchase Order (PO) or signed contract is issued and then cancelled or terminated by Customer before completion, GSFA may charge a cancellation fee. The following charge schedule based on costs incurred may be applied: (a) 10% of the Purchase Price after order is accepted and entered by GSFA; (b) 20% of the Purchase Price after completion of approval drawings, and; (c) 50% of the Purchase Price upon any material requisition. The cancellation fee shall increase accordingly as costs are incurred as the order progresses through engineering and into manufacturing. GSFA endeavors to mitigate any such costs through the sale of such Product to another purchaser; however, the Customer shall remain liable for the difference between the Purchase Price and, if applicable, the sale price obtained by GSFA upon sale of the Product to another purchaser, plus any costs incurred by GSFA to conduct any such sale.

7. Stock / Demo Units – If applicable, all stock/demo units are available for sale on an as is, first come and first served basis. The first Customer to issue a signed Purchase Order (PO) or signed contract shall obtain the Product!

8. Proposal Acceptance Statement – To ensure the above stated terms and conditions of this proposal and the specifications hereto attached are understood and adhered to, GSFA requires an authorized individual from the Customer to sign and date this proposal and include it with any Purchase Order (PO). Upon signing of this proposal, the stated terms and conditions of this proposal and the specifications hereto attached shall be considered binding and accepted by the Customer. No additional terms or conditions shall be binding upon GSFA unless agreed to in writing and signed by a duly authorized officer of GSFA. The terms and acceptance of this proposal shall be governed by the laws of the State of California.

Thank you for allowing Golden State Fire Apparatus, Inc. the opportunity to provide this proposal. If you have any questions regarding the options presented or need additional options please contact me.

Sincerely,



Ryan Wright
Golden State Fire Apparatus, Inc.

I, _____, the authorized representative of CONTRA COSTA COUNTY FIRE DISTRICT, agree to purchase the proposed Product(s) and agree to the terms and conditions of this proposal and the specifications hereto attached.

SIGNATURE: _____ DATE: _____

CONTRA COSTA COUNTY FIRE PROTECTION DISTRICT

Specifications for one (1) 105' Velocity Aerial Ladder

November 2, 2017 (Quote Number 91102-17A)

Golden State Fire Apparatus Inc. is pleased to submit a proposal to Contra Costa County Fire District for a **Pierce®105' Heavy Duty Aerial Ladder** per your request for quotation. The following paragraphs will describe in detail the apparatus, construction methods, and equipment proposed. This proposal will indicate size, type, model and make of components parts and equipment, providing proof of compliance with each and every item (except where noted) in the departments advertised specifications.

PIERCE MANUFACTURING was founded in 1913. Since then we have been building bodies with one philosophy, "BUILD THE FINEST". Our skilled craftsmen take pride in their work, which is reflected, in the final product. We have been building fire apparatus since the early "forties" giving Pierce Manufacturing over 60 years of experience in the fire apparatus market. Pierce Manufacturing has built and put into service more than 51,000 apparatus, including more than 27,000 on Pierce custom chassis designed and built specifically for fire and emergency applications. Our Appleton, Wisconsin facility has over 757,000 total square feet of floor space situated on approximately 97 acres of land. Our Bradenton, Florida facility has 300,000 square feet of floor space situated on approximately 38 acres of land.

Our beliefs in high ethical standards are carried through in all of our commitments and to everyone with whom we do business. Honesty, Integrity, Accountability and Citizenship are global tenets by which we all live and work. Consequently, we neither engage in, nor have we ever been convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

Pierce has only one brand of fire apparatus "Pierce", ensuring you are receiving top of the line product that meets your specification.

In accordance with the current edition of NFPA 1901 standards, this proposal will specify whether the fire department, manufacturer, or apparatus dealership will provide required loose equipment.

Images and illustrative material in this proposal are as accurate as known at the time of publication, but are subject to change without notice. Images and illustrative material is for reference only, and may include optional equipment and accessories and may not include all standard equipment.

GENERAL DESIGN AND CONSTRUCTION

To control quality, ensure compatibility, and provide a single source for service and warranty, the custom cab, chassis, pump module and body will be entirely designed, assembled/welded and painted in Pierce owned manufacturing facilities. This includes, but not limited to the cab weldment, the pumphouse module assembly, the chassis assembly, the body and the electrical system.

QUALITY AND WORKMANSHIP

Pierce has set the pace for quality and workmanship in the fire apparatus field. Our tradition of building the highest quality units with craftsmen second to none has been the rule right from the beginning and

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Specifications for one (1) 105' Velocity Aerial Ladder

November 2, 2017 (Quote Number 91102-17A)

we demonstrate that ongoing commitment by: Ensuring all steel welding follows American Welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding follows American Welding society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding follows American welding Society B2.1-2000 requirements for structural welding of sheet metal. Our flux core arc welding uses alloy rods, type 7000 and is performed to American Welding Society standards A5.20-E70T1. Furthermore, all employees classified as welders are tested and certified to meet the American welding Society codes upon hire and every three (3) years thereafter. Pierce also employs and American Welding Society certified welding inspector in plant during working hours to monitor weld quality.

Pierce Manufacturing operates 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 are established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance is included with this proposal.

In addition to the Quality Management system, we also employ a Quality Achievement Supplier program to insure the vendors and suppliers that we utilize meet the high standards we demand. That is just part of our overall "Quality at the Source" program at Pierce.

To demonstrate the quality of our products and services, a list of at least fifteen (15) fire departments/municipalities that have purchased vehicles for a second time is provided.

DELIVERY

The apparatus will be delivered under its own power to insure proper break-in of all components while the apparatus is still under warranty. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.

The specifications herein contained will form a part of the final contract and are subject to changes desired by the purchaser, provided such alterations are interlined prior to the acceptance by the company of the order to purchase, and provided such alterations do not materially affect the cost of the construction of the apparatus.

The proposal for fire apparatus conforms with all Federal Department of Transportation (DOT) rules and regulations in effect at the time of bid and with all National Fire Protection Association (NFPA) Guidelines for Automotive Fire Apparatus as published at the time of bid, except as modified by customer specifications. Any increased costs incurred by first party because of future changes in or additions to said DOT or NFPA standards will be passed along to the customers as an addition to the price set forth above.

Unless accepted within 30 days from date, the right is reserved to withdraw this proposition.

CONTRA COSTA COUNTY FIRE PROTECTION DISTRICT

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MANUAL AND SERVICE INFORMATION

At time of delivery, complete operation and maintenance manuals covering the apparatus will be provided. A permanent plate will be mounted in the driver's compartment specifying the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

SAFETY VIDEO

At the time of delivery Pierce will also provide one (1) 39-minute, professionally produced apparatus safety video, in DVD format. This video will address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus, including the following: vehicle pre-trip inspection, chassis operation, pump operation, aerial operation, and safety during maintenance.

PERFORMANCE TESTS

A road test will be conducted with the apparatus fully loaded and a continuous run of no less than ten (10) miles. During that time the apparatus will show no loss of power nor will it overheat. The transmission drive shaft or shafts and the axles will run quietly and be free of abnormal vibration or noise. The apparatus when fully loaded will not have less than 25 percent nor more than 50 percent on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle. The apparatus will meet NFPA 1901 acceleration and braking requirements.

SERVICE AND WARRANTY SUPPORT

Pierce dealership support will be provided by Golden State Emergency Vehicle Service Inc. by operating a Pierce authorized service center. The service center will have factory-trained mechanics on staff versed in Pierce fire apparatus. The service facility will be located within seventy five (75) miles of the fire department.

In addition to the dealership, Pierce has service facilities located in both, Weyauwega, Wisconsin and Bradenton, Florida. Pierce also maintains a dedicated parts facility of over 100,000 square feet in Appleton, Wisconsin. The parts facility stocks in excess of \$5,000,000 in parts dedicated to service and replacement parts. The parts facility employs a staff dedicated solely for the distribution and shipment of service and replacement parts.

Service parts for the apparatus being proposed can be found via Pierceparts.com which, is an interactive online tool that delivers information regarding your specific apparatus as well as the opportunity to register for training classes.

As a Pierce customer you have the ability to view the complete bill of materials for your specific apparatus, including assembly drawings, piece part drawings, and beneficial parts notations. You will also have the ability to search the complete Pierce item master through a parts search function which offers all Pierce SKU's and descriptions offered on all Pierce apparatus. Published component catalogs,

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Specifications for one (1) 105' Velocity Aerial Ladder

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which include proprietary systems along with an extensive operators manual library is available for easy reference.

Pierce Manufacturing maintains a dedicated service and warranty staff of over 35 personnel, dedicated to customer support, which also maintains a 24 hour 7 day a week toll free hot line, four (4) on staff EVTs, and offers hands-on repair and maintenance training classes multiple times a year.

COMMERCIAL GENERAL LIABILITY INSURANCE

Certification of insurance coverage will be enclosed.

Your apparatus will be manufactured in Appleton, Wisconsin.

SINGLE SOURCE MANUFACTURER

Pierce Manufacturing, Inc. provides an integrated approach to the design and manufacture of our products that delivers superior apparatus and a dedicated support team. From our facilities, the chassis, cab weldment, cab, pump house (including the sheet metal enclosure, valve controls, piping and operators panel) body and aerial device will be entirely designed, tested, and hand assembled to the customer's exact specifications. The electrical system either hardwired or multiplexed, will be both designed and integrated by Pierce Manufacturing. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) will be provided by Pierce as a single source manufacturer. Pierce's single source solution adds value by providing a fully engineered product that offers durability, reliability, maintainability, performance, and a high level of quality.

NFPA 2016 STANDARDS

This unit will comply with the NFPA standards effective January 1, 2016, except for fire department directed exceptions. These exceptions will be set forth in the Statement of Exceptions.

Certification of slip resistance of all stepping, standing and walking surfaces will be supplied with delivery of the apparatus.

All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points will be identified on the customer approval print and are shown as approximate. Actual location(s) will be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack.

A plate that is highly visible to the driver while seated will be provided. This plate will show the overall height, length, and gross vehicle weight rating.

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The manufacturer will have programs in place for training, proficiency testing and performance for any staff involved with certifications.

An official of the company will designate, in writing, who is qualified to witness and certify test results.

NFPA COMPLIANCY

Apparatus proposed by the bidder will meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Fire department's specifications that differ from NFPA specifications will be indicated in the proposal as "non-NFPA".

VEHICLE INSPECTION PROGRAM CERTIFICATION

To assure the vehicle is built to current NFPA standards, the apparatus, in its entirety, will be third-party, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition of NFPA 1901. The certification will include: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus.

A placard will be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.

INSPECTION CERTIFICATE

A third party inspection certificate for the aerial device will be furnished upon delivery of the aerial device. The certificate will be Underwriters Laboratories Inc. Type 1 and will indicate that the aerial device has been inspected on the production line and after final assembly.

Visual structural inspections will be performed on all welds on both aluminum and steel ladders.

On critical weld areas, or on any suspected defective area, the following tests will be conducted:

- Magnetic particle inspection will be conducted on steel aerials to assure the integrity of the weldments and to detect any flaws or weaknesses. Magnets will be placed on each side of the weld while iron powder is placed on the weld itself. The powder will detect any crack that may exist. This test will conform to ASTM E709 and be performed prior to assembly of the aerial device.
- A liquid penetrant test will be conducted on aluminum aerials to assure the integrity of the weldments and to detect any flaws or weaknesses. This test will conform to ASTM E165 and be performed prior to assembly of the aerial device.
- Ultrasonic inspection will be conducted on all aerials to detect any flaws in pins, bolts and other critical mounting components.

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In addition to the tests above, functional tests, load tests, and stability tests will be performed on all aerials. These tests will determine any unusual deflection, noise, vibration, or instability characteristics of the unit.

GENERATOR TEST

If the unit has a generator, the generator will be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results will be provided to the Fire Department at the time of delivery.

INSPECTION TRIP(S)

The bidder will provide two (2) factory inspection trip(s) for five (5) CCCFPD customer representative(s). The inspection trip(s) will be scheduled at times mutually agreed upon between the manufacturer's representative and the customer. All costs such as travel, lodging and meals will be the responsibility of the bidder.

PRODUCT CHANGES AND IMPROVEMENTS

Our components and processes, as described in this proposal document, are as accurate as known at the time of bid submission, but are subject to change for the purpose of product or process improvements, or changes in industry standards providing the change does not affect the meaning or definition of the bid specifications.

PERFORMANCE BOND, 1 YEAR

The successful bidder will furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond will be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.

Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Basic One (1) Year Limited Warranty period included within this proposal. Owner agrees that the penal amount of this bond will be simultaneously amended to 25 percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type will not exceed one (1) year from the date of such satisfactory acceptance and delivery, or the actual Basic One (1) Year Limited Warranty period, whichever is shorter.

APPROVAL DRAWING

A drawing of the proposed apparatus will be prepared and provided to the purchaser for approval before construction begins. The Pierce sales representative will also be provided with a copy of the same

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drawing. The finalized and approved drawing will become part of the contract documents. This drawing will indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.

A "revised" approval drawing of the apparatus will be prepared and submitted by Pierce to the purchaser showing any changes made to the approval drawing.

COMPARTMENT LAYOUT DRAWING

A sales drawing will be provided as if the rear body compartment doors are open. This drawing will be provided for graphic representation only and will include such things as shelves, trays, reels, dividers, air control panels, air bottle storage bins, poly boxes, etc.

VELOCITY CHASSIS

The Pierce Velocity® is the custom chassis developed exclusively for the fire service. Chassis provided will be a new, tilt-type custom fire apparatus. The chassis will be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis will be designed and manufactured for heavy-duty service, with adequate strength and capacity for the intended load to be sustained and the type of service required. The chassis will be the manufacturer's first line tilt cab.

MAXIMUM OVERALL HEIGHT

The maximum overall height of the apparatus will be 11'-8.00" (140.00") .

WHEELBASE

The wheelbase of the vehicle will be 248.50" .

GVW RATING

The gross vehicle weight rating will be 70,800 lbs.

FRAME

The chassis frame will be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus. The side rails will have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle. Each rail will have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle. The frame rails will be constructed of 120,000 psi yield strength heat-treated 0.38" thick steel with 3.50" wide flanges.

FRAME REINFORCEMENT

In addition, a mainframe inverted "L" liner will be provided. It will be heat-treated steel measuring 12.00" x 3.00" x 0.25". Each liner will have a section modulus of 7.795 cubic inches, yield strength of 110,000 psi, and rbm of 857,462 in-lb. Total rbm at wheelbase center will be 3,976,502 in-lb.

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The frame liner will be mounted inside of the chassis frame rail and extend the full length of the frame.

FRONT NON DRIVE AXLE

The Oshkosh TAK-4® front axle will be of the independent suspension design with a ground rating of 22,800 lb.

Upper and lower control arms will be used on each side of the axle. Upper control arm castings will be made of 100,000-psi yield strength 8630 steel and the lower control arm casting will be made of 55,000-psi yield ductile iron.

The center cross members and side plates will be constructed out of 80,000-psi yield strength steel.

Each control arm will be mounted to the center section using elastomer bushings. These rubber bushings will rotate on low friction plain bearings and be lubricated for life. Each bushing will also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.

There will be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.

The upper control arm will be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.

Camber at load will be 0 degrees for optimum tire life.

The ball joint bearing will be of low friction design and be maintenance free.

Toe links that are adjustable for alignment of the wheel to the center of the chassis will be provided.

The wheel ends will have little to no bump steer when the chassis encounters a hole or obstacle.

The steering linkage will provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.

The axle will have a third party certified turning angle of 45 degrees. Front discharge, front suction, or aluminum wheels will not infringe on this cramp angle.

FRONT SUSPENSION

Front Oshkosh TAK-4™ independent suspension will be provided with a minimum ground rating of 22,800 lb.

The independent suspension system will be designed to provide maximum ride comfort. The design will allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.

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Each wheel will have torsion bar type spring. In addition, each front wheel end will also have energy absorbing jounce bumpers to prevent bottoming of the suspension.

The suspension design will be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms.

The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.

The independent suspension was put through a durability test that simulated 140,000 miles of inner city driving.

FRONT SHOCK ABSORBERS

KONI heavy-duty telescoping shock absorbers will be provided on the front suspension.

FRONT OIL SEALS

Oil seals with viewing window will be provided on the front axle.

FRONT TIRES

Front tires will be Goodyear® 425/65R22.50 radials, 20 ply G296 MSA tread, rated for 22,800 lb maximum axle load and 68 mph maximum speed.

The tires will be mounted on Alcoa 22.50" x 12.25" polished aluminum disc type wheels with a ten (10)stud, 11.25" bolt circle.

REAR AXLE

The rear axle will be a Meritor™, Model RT-46-160, tandem axle assembly with a capacity of 48,000 lb.

An inter-axle differential, which divides torque evenly between axles, will be provided with an indicator light mounted on the cab instrument panel.

AXLE RATIO OF VEHICLE

The rear axle will be geared for a top speed of 68 mph. The engine will be electronically limited to a top speed of 60 mph.

REAR SUSPENSION

Rear suspension will be a Hendrickson Model FMX 482 EX, air ride with a ground rating of 48,000 lb. The suspension will have the following features:

- Outboard vertical mounted heavy-duty shock absorbers

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- Utilizes track bars and torque rods to restrict lateral axle movement and maintain constant pinion angles
- Super heavy-duty transverse beam to help reduce axle stress while increasing roll stability or resistance to lean
- Low spring rate air springs for excellent ride quality
- Dual height control valves to maintain level vehicle from side to side

REAR OIL SEALS

Oil seals will be provided on the rear axle(s).

REAR TIRES

Rear tires will be eight (8) Goodyear 12R22.50 radials, load range H, Endurance RSA, highway tread, rated for 54,240 lb maximum axle load and 75 mph maximum speed.

The tires will be mounted on Alcoa© 22.50" x 8.25" polished aluminum disc wheels with a ten (10) stud 11.25" bolt circle.

TIRE BALANCE

All tires will be balanced with Counteract balancing beads. The beads will be inserted into the tire and eliminate the need for wheel weights.

TIRE PRESSURE INDICATOR

NFPA 1901, 2016 edition, section 4.13.4 requires each tire be equipped with a visual indicator or monitoring system that indicates tire pressure.

Per Fire Department specification, a tire pressure indicator is not on the apparatus as manufactured. This apparatus will be non-compliant to NFPA 1901 standards effective at time of contract execution.

FRONT HUB COVERS

Stainless steel hub covers will be provided on the front axle. An oil level viewing window will be provided.

REAR HUB COVERS

Stainless steel, high hat, hub covers will be provided on the rear axle hubs.

LUG NUT COVERS

Stainless steel lug nut covers will be installed on all lug nuts.

MUD FLAPS

Mud flaps with a Pierce logo will be installed behind the front and rear wheels.

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STABILIZER SYSTEM (REAR VALVE STEMS)

A valve stem stabilizer system will be provided on the rear duals.

WHEEL CHOCKS

There will be one (1) pair of Worden Safety Products, Model HWGY-SB, wheel chocks provided.

Heavy Duty, large molded aluminum wheel chock with solid bottom, yellow powder coat finish.

WHEEL CHOCK BRACKETS

There shall be one (1) pair of Worden Safety model U815T mounting wheel chock brackets provided .
The brackets shall be mounted under D6 per print.

ANTI-LOCK BRAKE SYSTEM

The vehicle will be equipped with a Wabco 4S4M, anti-lock braking system. The ABS will provide a four (4) channel anti-lock braking control on both the front and rear wheels (rear tandem wheels). A digitally controlled system that utilizes microprocessor technology will control the anti-lock braking system. Each wheel will be monitored by the system. When any particular wheel begins to lockup, a signal will be sent to the control unit. This control unit then will reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system will eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

BRAKES

The service brake system will be full air type.

The front brakes will be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.

The brake system will be certified, third party inspected, for improved stopping distance.

The rear brakes will be Meritor™, Disc Plus, EX225 disc operated with automatic slack adjusters and a 17.00" ventilated rotor for improved stopping distance.

BRAKE SYSTEM AIR COMPRESSOR

The air compressor will be a Cummins/WABCO with 18.7 cubic feet per minute output.

BRAKE SYSTEM

The brake system will include:

- Bendix dual brake treadle valve
- Heated automatic moisture ejector on air dryer
- Total air system capacity of 6,653 cubic inches
- Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi

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- Spring set parking brake system
- Parking brake operated by a push-pull style control valve
- A parking "brake on" indicator light on instrument panel
- Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, will be provided with an automatic spring brake application at 40 psi
- A pressure protection valve will be provided to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa).
- 1/4 turn drain valves on each air tank

The air tank will be primed and painted to meet a minimum 750 hour salt spray test.

To reduce the effects of corrosion, the air tank will be mounted with stainless steel brackets.

- Bendix AD-9 air dryer, with heater and coalescing filter

BRAKE LINES

Color-coded nylon brake lines will be provided. The lines will be wrapped in a heat protective loom in the chassis areas that are subject to excessive heat.

AIR OUTLET

One (1) air outlet will be installed with a female coupling located below D4 mounted on the forward side of the aux stabilizer pad holder. This system will tie into the "wet" tank of the brake system, include an 85 psi pressure protection valve in the outlet line to prevent the brake system from losing all air, and include a quarter turn shut off valve mounted at the tank. The valve and hoses will be mounted to the tank as high as possible to ensure maximum clearance and protect the lines from being damaged by brush and rocks during off-road operations.

AIR OUTLET

Two (2) air outlets will be installed with a female coupling and shut off valve, located recessed in the driver side and passenger side lower step well of cab. This system will tie into the "wet" tank of the brake system and include an 85 psi pressure protection valve in the outlet line to prevent the brake system from losing all air.

A mating male fitting will be provided with the loose equipment.

ALL WHEEL LOCK-UP

An additional all wheel lock-up system will be installed which applies air to the front brakes only. The standard spring brake control valve system will be used for the rear.

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AIR TANK MOUNTING

Air tanks will be installed to maximize ground clearance. Smaller tanks may be required to allow for them to be mounted higher for increased ground clearance.

AIR TANK, ADDITIONAL

An additional air tank with 1454 cubic inch displacement will be provided to increase the capacity of the main air brake system. This tank will be plumbed into the rear half of the brake system.

The air tank will be primed and painted to meet a minimum 750 hour spray test. To reduce the effects of corrosion, the air tank will be mounted with stainless steel brackets.

The output flow of the engine air compressor will vary with engine rpm. Full compressor output will only be achieved at governed engine speed. Engine speed will be limited by generators, pumps and other PTO driven options.

AIR LINE

The air line from the air compressor governor to the air dryer will be stainless steel braid.

ENGINE

The chassis will be powered by an electronically controlled engine as described below:

Make:	Cummins®
Model:	X15
Power:	600 hp at 1800 rpm
Torque:	1850 lb-ft at 1200 rpm
Governed Speed:	2100 rpm
Emissions Level:	EPA 2017
Fuel:	Diesel
Cylinders:	Six (6)
Displacement:	912 cubic inches (14.9L)
Starter:	Delco 39MT+™
Fuel Filters:	Frame mounted spin-on style primary filter with water separator and water-in-fuel sensor

The engine will include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system will give the owner or repair technician access to state of health information for various vehicle sub systems. The system will monitor vehicle systems, engine and after treatment. The system will illuminate a malfunction indicator light on the dash console if a problem is detected.

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HIGH IDLE

A high idle switch will be provided, inside the cab, on the instrument panel, that will automatically maintain a preset engine rpm. A switch will be installed, at the cab instrument panel, for activation/deactivation.

The high idle will be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light will be provided, adjacent to the switch. The light will illuminate when the above conditions are met. The light will be labeled "OK to Engage High Idle."

ENGINE BRAKE

A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.

The driver will be able to turn the engine brake system on/off and have a high, medium and low setting.

The engine brake will activate when the system is on and the throttle is released.

The high setting of the brake application will activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.

The engine brake will be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.

The ABS system will automatically disengage the auxiliary braking device, when required.

CLUTCH FAN

A Horton® fan clutch will be provided. The fan clutch will be automatic when the pump transmission is in "Road" position, and fully engaged in "Pump" position.

ENGINE AIR INTAKE

An air intake with an ember separator (to prevent road dirt, burning embers, and recirculating hot air from entering the engine) will be mounted at the front of the apparatus, on the passenger side of the engine. The ember separator will be mounted in the air intake with flame retardant, roto-molded polyethylene housing. It will be easily accessible by the hinged access panel at the front of the vehicle.

EXHAUST SYSTEM

The exhaust system will include a Single Module™ aftertreatment device to meet current EPA standards. The exhaust system will be stainless steel from the turbo to the inlet of the aftertreatment device, and will be 5.00" in diameter. An insulation wrap will be provided on all exhaust pipes between the turbo and aftertreatment device to minimize the heat loss to the aftertreatment device. The exhaust will terminate horizontally ahead of the right side rear wheels. A tailpipe diffuser will be provided to

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reduce the temperature of the exhaust as it exits. Heat deflector shields will be provided to isolate chassis and body components from the heat of the tailpipe diffuser.

EXHAUST MODIFICATION

The exhaust pipe will be 90 degrees to the body.

The diffuser will be reduced to 5.00" in the center to accommodate the fire department's air recovery system. The 5.00" extension pipe coming out of the end of the diffuser will be flush with the body rub rail. There will be a minimum of 4.00" clearance between the top of the 5.00" extension and the bottom of the body.

There will be a minimum of 2.50" from the exhaust pipe to the under side of the body heat shield. The last 7.00" of the exhaust will be free of hangers and/or clamps.

EXHAUST MODIFICATION

The exhaust pipe will be brought out from under the body at a 35 degree angle to the rear.

The diffuser will not be cut straight to the body, and the outer edge will be flush with the body rubrail. There will be a minimum of 2.50" from the exhaust pipe to the under side of the body heat shield. The last 7.00" of the exhaust will be free of hangers and/or clamps.

RADIATOR

The radiator and the complete cooling system will meet or exceed NFPA and engine manufacturer cooling system standards.

For maximum corrosion resistance and cooling performance, the entire radiator core will be constructed using long life aluminum alloy. The core will be made of aluminum fins, having a serpentine design, brazed to aluminum tubes. The tubes will be brazed to aluminum headers. No solder joints or leaded material of any kind will be acceptable in the core assembly. The radiator core will have a minimum frontal area of 1434 square inches. Supply tank made of glass-reinforced nylon and a return tank of cast aluminum alloy shall be crimped on to the core assembly using header tabs and a compression gasket to complete the radiator core assembly. The radiator will be compatible with commercial antifreeze solutions.

There will be a full steel frame around the entire radiator core assembly. The radiator core assembly will be isolated within the steel frame by rubber inserts to enhance cooling system durability and reliability. The radiator will be mounted in such a manner as to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. The radiator assembly will be isolated from the chassis frame rails with rubber isolators.

The radiator assembly will include an integral deaeration tank permanently mounted to the top of the radiator framework, with a readily accessible remote-mounted overflow tank. For visual coolant level

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inspection, the radiator will have a built-in sight glass. The radiator will be equipped with a 15 psi pressure relief cap.

A drain port will be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.

A heavy-duty fan will draw in fresh, cool air through the radiator. Shields or baffles will be provided to prevent recirculation of hot air to the inlet side of the radiator.

COOLANT LINES

Gates® silicone hoses will be used for all engine/heater coolant lines installed by the chassis manufacturer.

The chassis manufacturer will also use Gates brand hose on other heater, defroster and auxiliary coolant circuits. There will be some areas in which an appropriate Gates product is not available. In those instances, a comparable silicone hose from another manufacturer will be used.

Hose clamps will be stainless steel "constant torque type" to prevent coolant leakage. They will react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.

FUEL TANK

A 65 gallon fuel tank will be provided and mounted at rear of chassis. The tank will be constructed of 12-gauge, hot rolled steel. It will be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank will be mounted with stainless steel straps.

A .75" drain plug will be provided in a low point of the tank for drainage.

A fill inlet will be located on the left hand and right hand sides of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only."

A .50" diameter vent will be provided running from top of tank to just below fuel fill inlets.

The tank will meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume.

Servicing the fuel tank pick-up tubes and fuel gauge sending unit will be capable of being accomplished by draining fuel and dropping tank.

All fuel lines will be provided as recommended by the engine manufacturer.

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DIESEL EXHAUST FLUID TANK

A 4.5 gallon diesel exhaust fluid (DEF) tank will be provided and mounted in the driver's side body forward of the rear axle.

A 0.50" drain plug will be provided in a low point of the tank for drainage.

A fill inlet will be provided and marked "Diesel Exhaust Fluid Only". The fill inlet will be located below the air bottle storage behind a common door on the driver side of the vehicle.

The tank will meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.

The tank will include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

AUXILIARY FUEL PUMP

An auxiliary electric fuel pump will be added to the fuel line for re priming the engine. A switch to operate the pump will be located in the engine compartment, close to the fuel filters - add a half moon protective guard for this switch. The switch shall be properly labeled.

FUEL SHUTOFF

A shutoff valve will be installed in the fuel line, at the fuel tank.

FUEL COOLER

An air to fuel cooler will be installed in the engine fuel return line.

DEF GAUGE, ADDITIONAL

An additional DEF gauge will be provided behind the door where the DEF fill neck is (customer wants to be able to view this gauge when filling the tank however the gauge is not to be visible from outside the vehicle) for monitoring the chassis DEF level. The gauge will be durable for both inside and outside element use.

LABEL, DEF DOOR

A label, reading "DEF Fluid Only" will be provided next to the fill cap on the inside of the door.

FUEL DOOR LABEL

two (2) fuel fill label(s), "Ultra Low Sulfur Diesel Fuel Only" will be provided on the inside of the fuel fill door.

FUEL SEPARATOR

The engine will be equipped with a Racor in-line spin-on fuel and water separator in addition to the engine fuel filters.

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TRANSMISSION

An Allison 5th generation, Model EVS 4500P, electronic, torque converting, automatic transmission will be provided.

The transmission will be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display will indicate when service is due.

Two (2) PTO openings will be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).

A transmission temperature gauge with red light and buzzer will be installed on the cab instrument panel.

TRANSMISSION SHIFTER

A six (6)-speed push button shift module will be mounted to right of driver on console. Shift position indicator will be indirectly lit for after dark operation.

The transmission ratio will be 1st - 4.70 to 1.00, 2nd - 2.21 to 1.00, 3rd - 1.53 to 1.00, 4th - 1.00 to 1.00, 5th - 0.76 to 1.00, 6th - 0.67 to 1.00, R - 5.55 to 1.00.

TRANSMISSION COOLER

A Modine plate and fin transmission oil cooler will be provided using engine coolant to control the transmission oil temperature.

DOWNSHIFT MODE (W/ENGINE BRAKE)

The transmission will be provided with an aggressive downshift mode.

This will provide earlier transmission downshifts to 3rd gear from 6th gear, resulting in improved engine braking performance.

TRANSMISSION FLUID

The transmission will be provided with TranSynd heavy duty synthetic transmission fluid.

DRIVELINE

Drivelines will be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints.

The shafts will be dynamically balanced before installation.

A splined slip joint will be provided in each driveshaft. The slip joint will be coated with Glidecoat® or equivalent.

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STEERING

Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, will be provided. For reduced system temperatures, the power steering will incorporate an air to oil cooler and an Eaton, Model VN20, hydraulic pump with integral pressure and flow control. All power steering lines will have wire braded lines with crimped fittings.

A tilt and telescopic steering column will be provided to improve fit for a broader range of driver configurations.

STEERING WHEEL

The steering wheel will be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.

LOGO AND CUSTOMER DESIGNATION ON DASH

The dash panel will have an emblem containing the Pierce logo and customer name. The emblem will have three (3) rows of text for the customer's department name. There will be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row.

The first row of text will be: CONTRA

The second row of text will be: COSTA

The third row of text will be: FIRE-RESCUE

TAG/LABEL

The following three (3) tags or labels will be provided near the fill port of the following: engine oil, transmission fluid, power steering on the chassis or cab. The tag/label will be configured and read fluid specification: type and weight of fluid.

BUMPER

A one (1) piece bumper manufactured from .25" formed steel with a .38" bend radius will be provided. The bumper will be a minimum of 10.00" high with a 1.50" top and bottom flange. The bumper will be 95.28" wide with 45 degree corners. The bumper will be metal finished and painted job color. To provide adequate support strength, the bumper will be mounted directly to the front of the C channel frame. The frame will be a bolted modular extension frame constructed of 50,000 psi tensile steel.

GRAVEL PAN

A gravel pan, constructed of bright aluminum treadplate, will be furnished between the bumper and the cab face. The pan will be properly supported from the underside to prevent flexing and vibration.

Documentation will be provided, upon request, to show that the options selected have been engineered for fit-up and approval for this modular bumper extension. A chart will be provided to indicate the

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option locations and will include but not be limited to the following options: air horns, mechanical sirens, speakers, hose trays (with hose capacities), winches, lights, discharge and suction connections.

LIFT AND TOW MOUNTS

Mounted to the frame extension will be lift and tow mounts. The lift and tow mounts will be designed and positioned to adapt to certain tow truck lift systems.

The lift and tow mounts with eyes will be painted the same color as the frame.

TOW HOOKS

No tow hooks are to be provided. This truck will be equipped with a lift and tow package with integral tow eyes.

LICENSE PLATE (MOUNTING HOLES)

Four (4) mounting holes will be provided passenger's side of the front bumper for the customer to mount a license plate.

RHINO COATING - FRONT BUMPER

Protective black Rhino Linings® coating will be provided on the outside exterior of the top front bumper flange. It will not be sprayed on the underside of the flange.

The lining will be properly installed by an authorized Rhino Linings® dealer.

CAB

The Velocity cab will be designed specifically for the low mount, rear mount aerial fire service and will be manufactured by the chassis builder.

To provide quality at the source and single source customer support, the cab will be built by the apparatus manufacturer in a facility located on the manufacturer's premises.

For reasons of structural integrity and enhanced occupant protection, the cab will be of heavy duty design, constructed to the following minimal standards.

The cab will have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts) and rear wall areas. The A-pillar will be constructed of 0.25" heavy wall extrusions joined by a solid A356-T6 aluminum joint casting. The B-pillar and C-pillar will also be constructed from 0.25" heavy wall extrusions. The rear wall will be constructed of two (2) 4.00" x 2.00" outer aluminum extrusions and two (2) 3.00" x 2.00" inner aluminum extrusions. All main vertical structural members will run from the floor to 7.50" x 3.50" x 0.125" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.75" thick corner casting at each of the front corners of the roof assembly.

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The front of the cab will be constructed of a 0.25" thick firewall, covered with a 0.125" front skin (for a total thickness of 0.38"), and reinforced with 24.50" wide x 10.00" deep x 0.50" thick supports on each side of the engine tunnel. The cross-cab support will be welded to the A-pillar, 0.25" firewall, and engine tunnel, on the left and right sides.

The cab floors will be constructed of 0.1875" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.44" of structural material at the front floor area. The front floor area will also be supported with three (3) 0.50" plates bolted together that also provides the mounting point for the cab lift. This tubing will run from the front of the cab to the 0.1875" thick engine tunnel, creating the structure to support the forces created when lifting the cab.

The cab will be a full-tilt style. A three (3)-point cab mount system with rubber isolators will improve ride quality by isolating chassis vibrations from the cab.

The crew cab will be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.

The forward cab section will have an overall height (from the cab roof to the ground) of approximately 102.00". The crew cab section will have a 10.00" raised roof, with an overall cab height of approximately 112.00". The raised portion will start at the most forward point of the B-pillar and continue rearward to the back of the cab. The overall height listed will be calculated based on a truck configuration with the lowest suspension weight ratings, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension will increase the overall height listed.

The cab roof will be provided with a 58.00" wide notch that lowers the center section of the cab roof by 3.00". The deep notch will continue from the front of the cab and extend full length to the rear of the cab. The deep notch will accommodate a low mount aerial device, and provide lower overall vehicle height.

The cab will have an interior width of not less than 93.50". The driver and passenger seating positions will have a minimum 24.00" clear width at knee level.

To reduce injuries to occupants in the seated positions, proper head clearance will be provided. The floor-to-ceiling height inside the forward cab will be no less than 60.25". The floor-to-ceiling height inside the crew cab will be no less than 50.95" in the center position and 68.75" in the outboard positions.

The crew cab will measure a minimum of 57.50" from the rear wall to the backside of the engine tunnel (knee level) for optimal occupant legroom.

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INTERIOR CAB INSULATION

The cab walls, ceiling and engine tunnel will be insulated in all strategic locations to maximize acoustic absorption and thermal insulation. The cab will be insulated with 2.00" insulation in the rear wall, 3.00" insulation in the side walls, and 1.50" insulation in the ceiling.

FENDER LINERS

Full-circular, aluminum, inner fender liners in the wheel wells will be provided.

PANORAMIC WINDSHIELD

A one (1) piece, safety glass windshield with more than 2,802 square inches of clear viewing area will be provided. The windshield will be full width and will provide the occupants with a panoramic view. The windshield will consist of three (3) layers: the outer light, the middle safety laminate, and the inner light. The 0.114" thick outer light layer will provide superior chip resistance. The middle safety laminate layer will prevent the windshield glass pieces from detaching in the event of breakage. The inner light will provide yet another chip resistant layer. The cab windshield will be bonded to the aluminum windshield frame using a urethane adhesive. A custom frit pattern will be applied on the outside perimeter of the windshield for a finished automotive appearance.

WINDSHIELD WIPERS

Three (3) electric windshield wipers with a washer, in conformance with FMVSS and SAE requirements, will be provided. The wiper blades will be 21.65" long and together will clear a minimum of 1,783 square inches of the windshield for maximum visibility in inclement weather.

The windshield washer fluid reservoir will be located at the front of the vehicle and be accessible through the access hood for simple maintenance.

FAST SERVICE ACCESS FRONT TILT HOOD

A full-width access hood will be provided for convenient access to engine coolant, steering fluid, wiper fluid, cab lift controls, headlight power modules, and ember separator. The hood will also provide complete access to the windshield wiper motor and components. The hood will be contoured to provide a sleek, automotive appearance. The hood will be constructed of two (2) fiberglass panels bonded together and will include reinforcing ribs for structural integrity. The hood will include air cylinders to hold the hood in open and closed positions, and a heavy duty latch system that will meet FMVSS 113 (Hood Latch System). The spring-loaded hood latch will be located at the center of the hood with a double-action release lever located behind the Pierce logo. The two (2)-step release requires the lever first be pulled to the driver side until the hood releases from the first latch (primary latch) then to the passenger side to fully release the hood (secondary latch).

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ENGINE TUNNEL

To provide structural strength, the engine tunnel sidewalls will be constructed of .50" aluminum plate that is welded to both the .25" firewall and .38" heavy wall extrusion under the crew cab floor. To maximize occupant space, the top edges will be tapered.

The engine tunnel will be insulated on both sides for thermal and acoustic absorption. The underside of the tunnel will be covered with 1.00" thick polyether foam that is reinforced with an aluminized face. Thermal rating for this insulation will be -40 degrees Fahrenheit to 300 degrees Fahrenheit. The insulation will keep noise (dBA) levels at or lower than the specifications in the current edition of the NFPA 1901 standards.

CAB REAR WALL EXTERIOR COVERING

The exterior surface of the rear wall of the cab will be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.

CAB LIFT

A hydraulic cab lift system will be provided, consisting of an electric-powered hydraulic pump, fluid reservoir, dual lift cylinders, remote cab lift controls and all necessary hoses and valves. The hydraulic pump will have a backup manual override, for use in the event of an electrical failure.

The cab lift controls will be located at the driver side front of the cab, easily accessible under the full width front access hood. The controls will include a permanently mounted raise/lower switch. For enhanced visibility during cab tilt operations, a remote control tether with on/off switch will be supplied on a coiled cord that will extend from 2.00' (coiled) to 6.00' (extended).

The cab will be capable of tilting 42 degrees and 80 degrees with crane assist to accommodate engine maintenance and removal. The cab pivots will be located 46.00" apart to provide stability while tilting the cab.

The rear of the cab will be locked down by a two (2)-point, automatic, hydraulic, double hook mechanism that fully engages after the cab has been lowered (self-locking). The dual 2.25" diameter hydraulic cylinders will be equipped with a velocity fuse that protects the cab from accidentally descending when the cab is in the tilt position.

For increased safety, a redundant mechanical stay arm will be provided that must be manually put in place on the driver side between the chassis and cab frame when cab is in the raised position. This device will be manually stowed to its original position before the cab can be lowered.

Cab Lift Interlock

The cab lift safety system will be interlocked to the parking brake. The cab tilt mechanism will be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism will be disabled.

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LOCKDOWN INDICATOR

The "Do Not Move Truck" light and alarm will activate when the cab is not fully engaged into the lockdown latches.

CAB TILT CIRCUIT

The cab tilt mechanism will be operational with the battery switch only and with parking brake set.

GRILLE

A bright finished aluminum mesh grille screen, inserted behind a formed bright finished grille surround, will be provided on the front center of the cab, and will serve as an air intake to the radiator.

DOOR JAMB SCUFFPLATES

All cab door jambs will be furnished with a brushed stainless steel scuffplate, mounted on the striker side of the jamb.

FRONT CAB TRIM

A 10.00" band of 22 gauge brushed stainless steel trim will be installed across the front of the cab, from door hinge to door hinge. The trim band will be centered on the head lights and applied with two (2)-sided tape. A 0.625" self adhesive trim strip will be applied around the perimeter of the trim band.

There will be brushed stainless steel corner covers provided over the painted cab corner where the cab turn signals are located.

MIRRORS

A Retrac Aerodynamic, Model 613295, dual vision, motorized, west coast style mirror with chrome finish will be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass will be adjustable with a remote control within reach of the driver.

CAB DOORS

The forward cab and crew cab doors will be the half-height style door. To enhance entry and egress to the cab, the forward cab doors will be a minimum of 43.59" wide x 64.71" high. The crew cab doors will measure a minimum of 37.87" wide x 73.75" high.

The forward cab and crew cab doors will be constructed of extruded aluminum with a nominal material thickness of 0.125". The exterior door skins will be constructed from 0.090" aluminum.

The forward cab door windows will include a 7.50" high x 10.00" wide drop area at the front to enhance visibility.

A customized, vertical, pull-down type door handle will be provided on the exterior of each cab door. The exterior handle will be designed specifically for the fire service to prevent accidental activation, and will provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands. Each

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door will also be provided with an interior flush, open style paddle handle that will be readily operable from fore and aft positions, and be designed to prevent accidental activation. The interior handles will provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.

The cab doors will be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys will be Model 751. The locks will be capable of activating when the doors are open or closed. The doors will remain locked if locks are activated when the doors are opened, then closed.

A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf will be provided on all cab doors. There will be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.

A chrome grab handle will be provided on the inside of each cab and crew cab door.

The cab steps at each cab door location will be located below the cab doors and will be exposed to the exterior of the cab.

CAB DOOR PANELS

The inner cab door panels will be constructed out of brushed stainless steel. The cab door panels will be removable.

BLANK FACE PLATE

Blank face plate/s will be provided, in place of standard storage pockets, within the overhead console.

ELECTRIC WINDOW CONTROLS

Each cab entry door will be equipped with an electrically operated tempered glass window. A window control panel will be located on the door panel within easy reach of the respective occupant. Each switch will allow intermittent or auto down operation for ease of use. Auto down operation will be actuated by holding the window down switch for approximately 1 second. The driver control panel will contain a control switch for each cab door's window. All other door control panels will contain a single switch to operate the window within that door.

The window switches will be connected to the battery switch. The windows will only raise and lower when the battery switch is in the on position.

CAB STEPS

The forward cab and crew cab access steps will be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps will be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps will be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps will be a minimum 31.00" wide, and the crew cab steps will be 24.25"

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wide with an 8.00" minimum depth. The inside cab steps will not exceed 18.00" in height and be limited to two (2) steps. A slip-resistant handrail will be provided adjacent to each cab door opening to assist during cab ingress and egress.

STEP LIGHTS

For reduced overall maintenance costs compared to incandescent lighting, there will be four (4) white LED step lights provided. The lights will be installed at each cab and crew cab door, one (1) per step. The lights will be located in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.

In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light.

The lights will be activated when the adjacent door is opened.

FENDER CROWNS

Stainless steel fender crowns will be installed at the cab wheel openings.

HANDRAILS (ADDITIONAL)

There will be one (1) handrail(s) provided rear surface of the PS rear facing EMS compt. Handrail is 16" long, mounted 5.50" up off of defroster and on far outboard edge of compt. (SEE PHOTOS FOR DETAILS). The handrail will be an anodized aluminum extrusion with a ribbed design to provide a positive gripping surface.

Window Tint

The rollup window in the left side crew cab door will be tinted privacy dark gray.

Window Tint

The rollup window in the right side crew cab door will be tinted privacy dark gray.

FULL HEIGHT EXTERIOR STORAGE COMPARTMENTS

Provided on each side of the cab, to the rear of the crew cab access doors, will be a full height storage compartment with external access. Each compartment will be open from the top to the bottom of the compartment. There will be no dividers.

The lower section will be approximately 10.71" wide x 16.50" high x 22.00" deep. The upper section will be approximately 10.71" wide x 54.00" high x 22.75" deep. The rear wall will accommodate the wireway.

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Each door will be a painted, reverse hinged double pan construction with a non-locking D-ring slam latch. The doors will include gas shock style positive door holders. There will be no vertical flange on the striker side of the compartment.

The compartment interior will be D/A finished.

There will be eight (8) white LED strip lights, one (1) each side of lower and upper exterior compartment door opening. The lights will be controlled by an automatic door switch.

DOOR FRAME SCUFFPLATE

There will be two (2) scuffplate(s) provided for the compartments behind crew cab doors, 3 sided (top, forward vertical edge and bottom). Each scuffplate will be brushed stainless steel with a 0.38" lip down.

SCUFFPLATE

A full-height brushed stainless steel scuffplate shall be installed on the inside of each of the extended cab compartment door pans.

CAB ROOF COVERING

Horizontal cab roof surfaces, on each side of the aerial device, will be covered with bright aluminum treadplate. The aluminum treadplate will be bonded to the cab. Edges will be properly caulked to prevent water from leaking under the aluminum.

No front or side warning lights, or any other auxiliary options, will be mounted on top of the treadplate. The treadplate will extend and terminate next to all objects mounted on the roof.

CAB ROOF DRIP RAIL

For enhanced protection from inclement weather, a drip rail will be furnished on the sides of the cab. The drip rail will be constructed of bright polished extruded aluminum, and be bonded to the sides of the cab. The drip rail will extend the full length of the cab roof.

DOOR STOP CHAINS

Chains to be supplied to keep the crew cab compartment doors from hitting the crew cab doors when opened. Doors will be set to open to 90 degrees.

WORK SURFACE(S)

There will be one (1) work surface(s) provided on the engine tunnel. The work surface(s) will be approximately 21.63" wide x 30.13" long (to match job 24837) and constructed of 0.19" aluminum to allow the mounting of equipment. The work surface(s) will be located to the left of the officer and to the rear of the defroster inlet (per job 29770). Each work surface will be painted to match the cab interior.

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CAB INTERIOR

With safety as the primary objective, the wrap-around style cab instrument panel will be designed with unobstructed visibility to instrumentation. The dash layout will provide the driver with a quick reference to gauges that allows more time to focus on the road.

The center console will be a high impact ABS polymer and will be easily removable for access to the defroster. The center console will include louvers strategically located for optimal air flow and defrost capability to the windshield.

The passenger side dashboard will be constructed of painted aluminum for durability and low maintenance. For enhanced versatility, the passenger side dash will include a flat working surface.

To provide optional (service friendly) control panels, switches and storage modules, a painted aluminum overhead console will also be provided.

To complete the cab front interior design, painted aluminum modesty panels will be provided under the dash on both sides of the cab. The driver side modesty panel will provide mounting for the battery switch and diagnostic connectors, while the passenger side modesty panel provides a glove box, and ground access to the main electrical distribution panel via quick quarter turn fasteners.

To provide a deluxe automotive interior, the engine tunnel, side walls and rear wall will be covered by a leather grain vinyl that is resistant to oil, grease, and mildew.

The headliner will be installed in both forward and rear cab sections. The headliner panel will be a composition of an aluminum panel covered with a sound barrier and upholstery.

The cab structure will include designated raceways for electrical harness routing from the front of the cab to the rear upper portion of the cab. Raceways will be extruded in the forward door frame, floor, walls and overhead in the area where the walls meet the ceiling. The raceways located in the floor will be covered by aluminum extrusion, while the vertical and overhead raceways will be covered by painted aluminum covers. The raceways will improve harness integrity by providing a continuous harness path that eliminates wire chafing and abrasion associated with exposed wiring or routing through drilled metal holes. Harnesses will be laid in place.

CAB INTERIOR UPHOLSTERY

The cab interior upholstery will be dark silver gray. All cab interior materials will meet FMVSS 302 (flammability of interior materials).

CAB INTERIOR PAINT

A rich looking interior will be provided by painting all the metal surfaces inside the cab fire smoke gray, vinyl texture paint.

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CAB FLOOR

The cab and crew cab floor areas will be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.

The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has a 0.25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.

CAB DEFROSTER

To provide maximum defrost and heating performance, a 54,961 BTU heater-defroster unit with 558 SCFM of air flow will be provided inside the cab. The defroster unit will be strategically located under the center forward portion of the instrument panel. For easy access, a removable metal cover will be installed over the defroster unit. The defroster will include an integral aluminum frame air filter, high performance dual scroll blowers, and ducts designed to provide maximum defrosting capabilities for the 1-piece windshield. The defroster ventilation will be built into the design of the cab dash instrument panel and will be easily removable for maintenance. The defroster will be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system will meet or exceed SAE J382 requirements.

CAB/CREW CAB HEATER

Two (2) 36,702 BTU auxiliary heaters with 276 SCFM (each unit) of air flow will be provided inside the crew cab, one (1) in each outboard rear facing seat riser. The heaters will include high performance dual scroll blowers, one (1) for each unit. Outlets for the heaters will be located below each rear facing seat riser and below the fronts of the driver and passenger seats, for efficient airflow. An extruded aluminum plenum will be incorporated in the cab structure that will transfer heat to the forward cab seating positions.

The heater/defroster and crew cab heaters will be controlled by an integral electronic control panel. The heater control panel will allow the driver to control heat flow to the front and rear independently. The control panel will include variable adjustment for temperature and fan control, and be conveniently located on the dash in clear view of the driver. The control panel will include highly visible, progressive LED indicators for both fan speed and temperature.

AIR CONDITIONING

A high-performance, customized air conditioning system will be furnished inside the cab and crew cab. A 13.10 cubic inch compressor will be installed on the engine.

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A roof-mounted condenser with a 63,000 BTU output that meets and exceeds the performance specification will be installed on the cab roof. The condenser cover and mounting legs to be painted to match the cab roof.

The evaporator unit will be installed in the cab, located in the center of the cab ceiling over the engine tunnel. The evaporator will include two (2) high performance cores and plenums with multiple outlets, one (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.

There will be a hinge on the forward edge of the filter cover and two (2) quarter turn fasteners with a knob on the rear edge to allow easy access.

The evaporator unit will have a 49,000 BTU rating that meets and exceeds the performance specifications.

Adjustable air outlets will be strategically located on the evaporator cover per the following:

- Four (4) will be directed towards the drivers location
- Four (4) will be directed towards the officers location
- Eight (8) will be directed towards crew cab area

The air conditioner refrigerant will be R-134A and will be installed by a certified technician.

The air conditioner will be controlled by dual zone integral electronic control panels for the heater, defroster and air conditioner. The cab control panel will be located in the center console. For ease of operation, the control panels will include variable adjustment for temperature and fan control.

INTERIOR CAB INSULATION

The cab walls, ceiling, and engine tunnel will be insulated in all strategic locations to maximize acoustic absorption and thermal insulation. The cab will be insulated with 2.00" insulation in the rear wall, 3.00" insulation in the side walls, and 1.50" insulation in the ceiling. Headliners will be constructed from a 0.20" high density polyethylene corrugated material. Each headliner will be wrapped with a 0.25" thick foil faced poly damp low emissivity foam insulation barrier for acoustic and thermal control. For ease of installation and removal, all headliners will be held in place by a dual lock fastening system.

Designed for maximum sound absorption and thermal insulation, the rear cab wall will be insulated with 1.50" thick open cell acoustical foam. The thermal protection of the foam will provide an R-value of four (4) per 1.00" thickness.

SUN VISORS

Two (2) smoked Lexan™ sun visors provided. The sun visors will be located above the windshield with one (1) mounted on each side of the cab.

There will be a black plastic thumb latch provided to help secure each sun visor in the stowed position.

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GRAB HANDLE

A black rubber covered grab handle will be mounted on the door post of the driver side and passenger side cab door to assist in entering the cab. The grab handle will be securely mounted to the post area between the door and windshield.

ENGINE COMPARTMENT LIGHTS

There will be one (1) Whelen®, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.

These light(s) will be activated automatically when the cab is raised or when the dip stick door is opened.

ACCESS TO ENGINE DIPSTICKS

For access to the engine oil and transmission fluid dipsticks, there will be a door on the engine tunnel, inside the crew cab. The door will be on the rear wall of the engine tunnel, on the vertical surface. The door will be 17.75" wide x 12.75" high and be flush with the wall of the engine tunnel.

The engine oil dipstick will allow for checking only. The transmission dipstick will allow for both checking and filling. An additional port will be provided for filling the engine oil.

The door will have a rubber seal for thermal and acoustic insulation. One (1) flush latch will be provided on the access door.

MAP BOX

There will be one (1) map box(es) with three (3) bins, open at top. The map box(es) will be installed at final inspection. The map box(es) will be divided into three (3) bins, each being 12.50" wide x 3.00" high x 12.00" deep. Each bin will slant 30 degrees from horizontal. The map box(es) will be constructed of 0.125" aluminum and will be painted to match the cab interior.

VELCRO STRAP(S) FOR MAP BOX

There will be one (1) Velcro® strap(s) installed on the map box .

SEATING CAPACITY

The seating capacity in the cab will be four (4).

DRIVER SEAT

A Pierce PS6® seat will be provided in the cab for the driver. The seat design will be a cam action type, with air suspension. For increased convenience, the seat will include electric controls to adjust the rake (15 degrees), height (1.12" travel) and horizontal (7.75" travel) position. Electric controls will be located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat will have a reclining back, adjustable from 20 degrees back to 45 degrees

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forward. The seat back will be a high back style with manual lumbar adjustment lever, for lower back support, and will include minimum 7.50" deep side bolster pads for maximum support. For optimal comfort, the seat will be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control).

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

OFFICER SEAT

A Pierce PS6® seat will be provided in the cab for the officer. The seat will be a cam action type with air suspension. For increased convenience, the seat will include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control will be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple passenger configurations, the seat will have a reclining back adjustable from 20 degrees back to 0 degrees forward. The seat back will be a high back style with manual lumbar adjustment lever and will include minimum 7.50" deep side bolster pads for maximum support. For optimal comfort, the seat will be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not buckled.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

REAR FACING DRIVER SIDE EMS COMPARTMENT

A rear facing EMS compartment will be provided in the crew cab at the driver side outboard position. The compartment will be mounted 7.00" off the edge of the seat riser.

The compartment will be 21.00" inside dimension for the main storage area of the compartment x 36.00" high x 25.00" measuring front to back of the cab.

The compartment will provide access from outside the cab with a double pan lap style reverse hinge door having a minimum clear door opening of 19.50" wide x 27.50" high. The door will include a D-ring latch and will be located on the side of the cab over the wheelwell.

The compartment will be constructed of smooth aluminum, and painted to match the cab interior.

There will be two (2) white LED strip lights installed, one (1) each side of the compartment opening. The lights will be controlled by an automatic door switch.

REAR FACING PASSENGER SIDE EMS COMPARTMENT

A rear facing EMS compartment will be provided in the crew cab at the passenger side outboard position. The compartment will be mounted 7.00" off the edge of the seat riser.

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The compartment will be 21.00" inside dimension for the main storage area of the compartment x 36.00" high x 25.00" measuring front to back of the cab.

The compartment will provide access from outside the cab with a double pan lap style reverse hinge door having a minimum clear door opening of 19.50" wide x 27.50" high. The door will include a D-ring latch and will be located on the side of the cab over the wheelwell.

The compartment will be constructed of smooth aluminum, and painted to match the cab interior.

There will be two (2) white LED strip lights installed, one (1) each side of the compartment opening. The lights will be controlled by an automatic door switch.

FORWARD FACING CENTER SEATS

There will be two (2) forward facing, Pierce PS6® seats provided at the center position in the crew cab. The seat backs will be a high back style with 7.5 degree fixed recline angle, and will include minimum 7.50" deep side bolster pads for maximum support. For optimal comfort, the seats will be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seats will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not buckled.

The seats will be furnished with 3-point, shoulder type seat belts. The seat belts will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

LIP ON CABINET

There will be a 1.00" lip provided around the top perimeter of the EMS compartment. There will NOT be anything stored on the top portion without restraints.

There will be two (2) compartment(s) provided with the 1.00" lip one each on top of the DS and PS rear facing EMS compartments (per Job 29770).

SHELVING

There will be two (2) shelves provided in the EMS compartment. Each shelf will be constructed of .090" aluminum with a 1.25" lip flanged down. Shelving will be infinitely adjustable by means of a threaded tightener sliding in a track.

The location will be one (1) in each rear facing EMS compartment.

CABINET TRIM

The outer edges of the cabinet door opening will be covered with brushed stainless steel. The top, bottom, and sides will be included. There will be two (2) door opening(s) being trimmed D7 and P7.

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MATTING IN EMS COMPARTMENT

Turtle Tile vinyl grating will be provided in two (2) EMS compartments, DS exterior access compartment (D8) and PS exterior access compartment (P8) on the interior floor. Tile color will be red.

The vinyl grating will be 0.50" thick and be cross bonded by 0.25" diameter ribbed sections spaced for aeration.

SEAT UPHOLSTERY

All Pierce PS6 seat upholstery will be gray woven with black Imperial 1200 material.

FORWARD FACING SEAT RISER

The forward facing seat risers in the crew cab will be 2.00" lower than standard.

SEAT BELTS

All seating positions in the cab, crew cab and tiller cab (if applicable) will have red seat belts.

To provide quick, easy use for occupants wearing bunker gear, the female buckle and seat belt webbing length will meet or exceed the current edition of NFPA 1901 and CAN/ULC - S515 standards.

The 3-point shoulder type seat belts will also include the ReadyReach D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.

SHOULDER HARNESS HEIGHT ADJUSTMENT

All seating positions furnished with 3-point shoulder type seat belts will include a height adjustment. This adjustment will optimize the belts effectiveness and comfort for the seated firefighter.

A total of four (4) seating positions will have the adjustable shoulder harness.

HELMET STORAGE PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2016 edition, section 14.1.7.4.1 requires a location for helmet storage be provided.

There is no helmet storage on the apparatus as manufactured. The fire department will provide a location for storage of helmets.

CAB DOME LIGHTS

There will be four (4) Weldon 808* series, dual LED dome lights with grey bezels provided. Two (2) lights will be mounted above the inside shoulder of the driver and officer and two (2) lights will be installed and located, one (1) on each side of the crew cab.

The color of the LED's will be red and white .

The white LED's will be controlled by the door switches and the lens switch.

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The color LED's will be controlled by the lens switch.

OVERHEAD MAP LIGHTS

There will be two (2) Peterson, Model M371S, rectangular LED adjustable map lights installed in the cab:

- One (1) overhead in front of the driving position.
- One (1) overhead in front of the passenger's position.

Each light will include a switch on the light housing.

The light switches will be connected directly to the battery switched power.

HAND HELD SPOTLIGHT

There will be four (4) Koehler, Model 510318, hand held lights with orange bodies and 12 volt charger units mounted RUN WIRES ONLY 1. DS EMS inside lower rear corner 2. PS EMS inside lower rear corner 3. inside compartment D6 4. inside compartment P6 - all wires runs to be provided with 3' extra wire.

The chargers will be hard wired to the chassis battery system.

ADDITIONAL HAND HELD LIGHT

There will be two (2) lights additional 12v Streamlight, Model #44451, Fire Vulcan LED light(s) will be provided and mounted One on cab riser of the DS below seatbase, lighthouse is to point towards the rear of the cab wall. One on cab riser of the PS below the seatbase, lighthouse is to point towards the rear of the cab wall. Each light will be provided with a 12 volt direct wire vehicle mounting rack.

Each light housing will be orange in color and be provided with a single C4 LED bulb and two (2) "ultra bright blue tail-light LEDs". The tail-light LEDs will have a dual mode of blinking or steady.

CAB INSTRUMENTATION

The cab instrument panel will consist of gauges, an LCD display, telltale indicator lights, alarms, control switches, and a diagnostic panel. The function of instrument panel controls and switches will be identified by a label adjacent to each item. Actuation of the headlight switch will illuminate the labels in low light conditions. Telltale indicator lamps will not be illuminated unless necessary. The cab instruments and controls will be conveniently located within the forward cab section directly forward of the driver. Gauge and switch panels will be designed to be removable for ease of service and low cost of ownership.

GAUGES

The gauge panel will include the following ten (10) ivory gauges with chrome bezels to monitor vehicle performance:

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- Voltmeter gauge (Volts)

Low volts (11.8 VDC)

Amber indicator on gauge assembly with alarm

High volts (15 VDC)

Amber indicator on gauge assembly with alarm

Very low volts (11.3 VDC)

Amber indicator on gauge assembly with alarm

Very high volts (16 VDC)

Amber indicator on gauge assembly with alarm

- Tachometer (RPM)

- Speedometer (Primary (outside) MPH, Secondary (inside) Km/H)

- Fuel level gauge (Empty - Full in fractions)

Low fuel (1/8 full)

Amber indicator on gauge assembly with alarm

Very low fuel (1/32) fuel

Amber indicator on gauge assembly with alarm

- Engine oil pressure gauge (PSI)

Low oil pressure to activate engine warning lights and alarms

Red indicator on gauge assembly with alarm

- Front air pressure gauge (PSI)

Low air pressure to activate warning lights and alarm

Red indicator on gauge assembly with alarm

- Rear air pressure gauge (PSI)

Low air pressure to activate warning lights and alarm

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Red indicator on gauge assembly with alarm

- Transmission oil temperature gauge (Fahrenheit)

High transmission oil temperature activates warning lights and alarm

Amber indicator on gauge assembly with alarm

- Engine coolant temperature gauge (Fahrenheit)

High engine temperature activates an engine warning light and alarm

Red indicator on gauge assembly with alarm

- Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions)

Low fluid (1/8 full)

Amber indicator on gauge assembly with alarm

All gauges and gauge indicators will perform prove out at initial power-up to ensure proper performance.

INDICATOR LAMPS

To promote safety, the following telltale indicator lamps will be integral to the gauge assembly and are located above and below the center gauges. The indicator lamps will be "dead-front" design that is only visible when active. The colored indicator lights will have descriptive text or symbols.

The following amber telltale lamps will be present:

- Low coolant
- Trac cntl (traction control) (where applicable)
- Check engine
- Check trans (check transmission)
- Aux brake overheat (Auxiliary brake overheat)
- Air rest (air restriction)
- Caution (triangle symbol)
- Water in fuel

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- DPF (engine diesel particulate filter regeneration)
- Trailer ABS (where applicable)
- Wait to start (where applicable)
- HET (engine high exhaust temperature) (where applicable)
- ABS (antilock brake system)
- MIL (engine emissions system malfunction indicator lamp) (where applicable)
- SRS (supplemental restraint system) fault (where applicable)
- DEF (low diesel exhaust fluid level)

The following red telltale lamps will be present:

- Warning (stop sign symbol)
- Seat belt
- Parking brake
- Stop engine
- Rack down

The following green telltale lamps will be provided:

- Left turn
- Right turn
- Battery on

The following blue telltale lamp will be provided:

- High beam

ALARMS

Audible steady tone warning alarm: A steady audible tone alarm will be provided whenever a warning message is present.

Audible pulsing tone caution alarm: A pulsing audible tone alarm (chime/chirp) will be provided whenever a caution message is present without a warning message being present.

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Alarm silence: Any active audible alarm will be able to be silenced by holding the ignition switch at the top position for three (3) to five (5) seconds. For improved safety, silenced audible alarms will intermittently chirp every 30 seconds until the alarm condition no longer exists. The intermittent chirp will act as a reminder to the operator that a caution or warning condition still exists. Any new warning or caution condition will enable the steady or pulsing tones respectively.

INDICATOR LAMP AND ALARM PROVE-OUT

Telltale indicators and alarms will perform prove-out at initial power-up to ensure proper performance.

CONTROL SWITCHES

For ease of use, the following controls will be provided immediately adjacent to the cab instrument panel within easy reach of the driver.

Emergency master switch: A molded plastic push button switch with integral indicator lamp will be provided. Pressing the switch will activate emergency response lights and siren control. A green lamp on the switch provides indication that the emergency master mode is active. Pressing the switch again disables the emergency master mode.

Headlight / Parking light switch: A three (3)-position maintained rocker switch will be provided. The first switch position will deactivate all parking lights and the headlights. The second switch position will activate the parking lights. The third switch position will activate the headlights.

Panel backlighting intensity control switch: A three (3)-position momentary rocker switch will be provided. The first switch position decreases the panel backlighting intensity to a minimum level as the switch is held. The second switch position is the default position that does not affect the backlighting intensity. The third switch position increases the panel backlighting intensity to a maximum level as the switch is held.

The following standard controls will be integral to the gauge assembly and are located below the right hand gauges. All switches have backlit labels for low light applications.

High idle engagement switch: A two (2)-position momentary rocker switch with integral indicator lamp will be provided. The first switch position is the default switch position. The second switch position will activate and deactivate the high idle function when pressed and released. The "Ok To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch will indicate when the high idle function is engaged.

"Ok To Engage High Idle" indicator lamp: A green indicator light will be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.

The following standard controls will be provided adjacent to the cab gauge assembly within easy reach of the driver. All switches will have backlit labels for low light applications.

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Ignition switch: A three (3)-position maintained/momentary rocker switch will be provided. The first switch position will deactivate vehicle ignition. The second switch position will activate vehicle ignition. The third momentary position will disable the Command Zone audible alarm if held for three (3) to five (5) seconds. A green indicator lamp will be activated with vehicle ignition.

Engine start switch: A two (2)-position momentary rocker switch will be provided. The first switch position is the default switch position. The second switch position will activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.

4-way hazard switch: A two (2)-position maintained rocker switch will be provided. The first switch position will deactivate the 4-way hazard switch function. The second switch position will activate the 4-way hazard function. The switch actuator will be red and includes the international 4-way hazard symbol.

Heater, defroster, and optional air conditioning control panel: A control panel with membrane switches will be provided to control heater/defroster temperature and heater, defroster, and air conditioning fan speeds. A green LED status bar will indicate the relative temperature and fan speed settings.

Turn signal arm: A self-canceling turn signal with high beam headlight and windshield wiper/washer controls will be provided. The windshield wiper control will have high, low, and intermittent modes.

Parking brake control: An air actuated push/pull park brake control valve will be provided.

Chassis horn control: Activation of the chassis horn control will be provided through the center of the steering wheel.

CUSTOM SWITCH PANELS

The design of cab instrumentation will allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There will be positions for up to four (4) switch panels in the overhead console on the driver's side, up to four (4) switch panels in the engine tunnel console facing the driver, up to four (4) switch panels in the overhead console on the officer's side and up to two (2) switch panels in the engine tunnel console facing the officer. All switches will have backlit labels for low light applications.

DIAGNOSTIC PANEL

A diagnostic panel will be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel will allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches will allow ABS systems to provide blink codes should a problem exist.

The diagnostic panel will include the following:

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- Engine diagnostic port
- Transmission diagnostic port
- ABS diagnostic port
- SRS diagnostic port (where applicable)
- Command Zone USB diagnostic port
- ABS diagnostic switch (blink codes flashed on ABS telltale indicator)
- Diesel particulate filter regeneration switch (where applicable)
- Diesel particulate filter regeneration inhibit switch (where applicable)

CAB LCD DISPLAY

A digital four (4)-row by 20-character dot matrix display will be integral to the gauge panel. The display will be capable of showing simple graphical images as well as text. The display will be split into three (3) sections. Each section will have a dedicated function. The upper left section will display the outside ambient temperature.

The upper right section will display, along with other configuration specific information:

- Odometer
- Trip mileage
- PTO hours
- Fuel consumption
- Engine hours

The bottom section will display INFO, CAUTION, and WARNING messages. Text messages will automatically activate to describe the cause of an audible caution or warning alarm. The LCD will be capable of displaying multiple text messages should more than one caution or warning condition exist.

AIR RESTRICTION INDICATOR

A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm shall be provided.

- Red indicator light on the cab dash that indicates whenever the cab locks are not fully engaged.

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- Officer Speedometer, A Class I digital display speedometer will be provided per the instrument panel layout.

"DO NOT MOVE APPARATUS" INDICATOR

There will be a Whelen, Model VTX609R, red LED indicator light with chrome trim located in the driving compartment. This light will be illuminated automatically per the current NFPA requirements. The light will be labeled "Do Not Move Apparatus If Light Is On."

The same circuit that activates the Do Not Move Apparatus indicator will activate a pulsing alarm when the parking brake is released.

DO NOT MOVE TRUCK MESSAGES

Messages will be displayed on the Command Zone™, color display located within sight of the driver whenever the Do Not Move Truck light is active. The messages will designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).

The following messages will be displayed (where applicable):

- Do Not Move Truck
- DS Cab Door Open (Driver Side Cab Door Open)
- PS Cab Door Open (Passenger's Side Cab Door Open)
- DS Crew Cab Door Open (Driver Side Crew Cab Door Open)
- PS Crew Cab Door Open (Passenger's Side Crew Cab Door Open)
- DS Body Door Open (Driver Side Body Door Open)
- PS Body Door Open (Passenger's Side Body Door Open)
- Rear Body Door Open
- DS Ladder Rack Down (Driver Side Ladder Rack Down)
- PS Ladder Rack Down (Passenger Side Ladder Rack Down)
- Deck Gun Not Stowed
- Lt Tower Not Stowed (Light Tower Not Stowed)
- Fold Tank Not Stowed (Fold-A-Tank Not Stowed)
- Aerial Not Stowed (Aerial Device Not Stowed)
- Stabilizer Not Stowed
- Steps Not Stowed
- Handrail Not Stowed

Any other device that is opened, extended, or deployed that creates a hazard or is likely to cause major damage to the apparatus if the apparatus is moved will be displayed as a caution message after the parking brake is disengaged.

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SWITCH PANELS

The emergency light switch panel will have a master switch for ease of use plus individual switches for selective control. Each switch panel will contain eight (8) membrane-type switches each rated for one million (1,000,000) cycles. Panels containing less than eight (8) switch assignments will include non-functioning black appliques. Documentation will be provided by the manufacturer indicating the rated cycle life of the switches. The switch panel(s) will be located in the overhead position above the windshield on the driver side overhead to allow for easy access.

Additional switch panel(s) will be located in the overhead position(s) above the windshield or in designated locations on the lower instrument panel layout.

The switches will be membrane-type and also act as an integral indicator light. For quick, visual indication the entire surface of the switch will be illuminated white whenever back lighting is activated and illuminated green whenever the switch is active. An active illuminated switch will flash when interlock requirements are not met or device is actively being load managed. For ease of use, a two (2)-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch will be placed in the center of the switch. The label will allow light to pass through the letters for ease of use in low light conditions.

WIPER CONTROL

For simple operation and easy reach, the windshield wiper control will be an integral part of the directional light lever located on the steering column. The wiper control will include high and low wiper speed settings, a one (1)-speed intermittent wiper control and windshield washer switch. The control will have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use.

HOURLMETER - AERIAL DEVICE

An hourmeter for the aerial device will be provided and located within the cab display or instrument panel.

AERIAL MASTER

There will be a master switch for the aerial operating electrical system provided.

AERIAL PTO SWITCH

A PTO switch for the aerial with indicator light will be provided.

14 GAUGE SPARE WIRE

There will be a pair of 14 gauge wires, one (1) with black insulation and one (1) with white insulation, included in a separate loom installed in the apparatus.

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These wires will be routed from overhead above the officer and terminate behind switch panel #4. Please leave 2' of extra wire overhead for ease of hookup and extended to the 20 amp Blue Sea fuse box (option 629279).

These wires will not be connected to any power source and will not be connected to the vehicle electrical system.

14 GAUGE SPARE WIRE

There will be a pair of 14 gauge wires, one (1) with black insulation and one (1) with white insulation, included in a separate loom installed in the apparatus.

These wires will be routed from overhead above the officer and terminate behind switch panel #4. Please leave 2' of extra wire overhead for ease of hookup and extended to the 40 amp Blue Sea fuse box (option 699928).

These wires will not be connected to any power source and will not be connected to the vehicle electrical system.

SPARE CIRCUIT #1

There will be two (2) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be protected to 15 amps at 12 volts DC.
- Power and ground will terminate RUN WIRES ONLY one (1) EACH in D7 and P7 (aux compts) Locate these in the rear upper inside corner, in the way back of upper area. In P7 this'll be upper left hand corner. D7 upper right corner.
- Termination will be with water resistant male and female plugs.
- Wires will be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is set.

SPARE CIRCUIT #2

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be protected to 10 amps at 12 volts DC.

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- Power and ground will terminate in the cab, one (1) to left of officer and aft of VDR plug per 28760 01-09.
- Termination will be a Blue Sea Systems part number 1045 dual USB charger socket.
- Wires will be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is applied.

SPARE CIRCUIT #3

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be protected to 40 amps at 12 volts DC.
- Power and ground will terminate back of officer side rear facing EMS cabinet as directed at construction review.
- Termination will be to a Blue Sea System, Model 5025, 6 circuit with negative bus bar. The terminal block will include a cover with circuit labels.
- Wires will be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is set.

SPARE CIRCUIT #4

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery switched power.
- The negative wire will be connected to ground.
- Wires will be protected to 20 amps at 12 volts DC.
- Power and ground will terminate back of officer side rear facing EMS cabinet as directed at construction review.
- Termination will be to a Blue Sea System, Model 5025, 6 circuit with negative bus bar. The terminal block will include a cover with circuit labels.
- Wires will be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is set.

SPARE CIRCUIT #5

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

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The above wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be protected to 15 amps at 12 volts DC.
- Power and ground will terminate forward wall of D6 below breaker box. Leave 2' of extra wire and label 'TIC CHARGER'.
- Termination will be with heat shrinkable butt splicing.
- Wires will be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is set.

SPARE CIRCUIT #6

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery saver
- The negative wire will be connected to ground
- Wires will be protected to 20 amps at 12 volts DC
- Power and ground will terminate in the recess area in front of the officer (on the left vertical wall through a grommet)
- Termination will be with heat shrinkable butt splicing
- Wires will be sized to 125% of the protection

This circuit(s) may be load managed when the parking brake is set.

SPARE CIRCUIT #7

There will be eight (8) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be protected to 15 amps at 12 volts DC.
- Power and ground will terminate (1) DS RF ems right inside lower corner, (1) PS RF ems left inside lower, (1) D1 right inside upper, (1) D2 left inside upper, (1) D4 left inside low, (1) D6 left inside below fl ext, (1) P1 back wall left upper corner, (1) P2 right inside wall upper corn.
- Termination will be with 15 amp, power point plug with rubber cover.
- Wires will be sized to 125 percent of the protection.

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This circuit(s) may be load managed when the parking brake is set.

SPARE CIRCUIT #8

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery switched power.
- The negative wire will be connected to ground.
- Wires will be protected to 10 amps at 12 volts DC.
- Power and ground will terminate underneath the forward facing crew cab seatbase. Label wire "DRUG BOX".
- Termination will be with heat shrinkable butt splicing.
- Wires will be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is applied.

SPARE CIRCUIT #9

There will be two (2) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be protected to 15 amps at 12 volts DC.
- Power and ground will terminate in the cab on the end of the instrument console (see instrument panel drawing for specific locations) and one on the PS ems cabinet, above the dual USB(645619).
- Termination will be with 15 amp, power point plug with rubber cover.
- Wires will be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is set.

DUAL USB SOCKET

There will be two (2) Blue Sea, Model 1016, dual USB type A charger sockets installed one (1) below the edge in front of the officer to the left of their knee. SEE PHOTO 5996 in 29764 job efolder. and one (1) on the PS rear facing compartment, inboard side of cabinet, on the outside of cabinet, rear upper corner, below power point plug. . The socket will be powered directly to the battery power .

DUAL USB SOCKET

There will be one (1) Kussmaul, 091-219, dual USB type A charger sockets installed one (1) at the end of the instrument console per 28760 01-09 (SEE PHOTO). Power will be directly to the battery power .

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RECESS, DASH PANEL

The dash panel across from the officer will be recessed to accommodate the mounting of miscellaneous items. The recess will be 8.25" down x 7.81" back and 20.88" wide.

WIRING & SPEAKERS FOR AM/FM RADIO

The cab will be pre-wired for an AM/FM radio to be installed after delivery.

The wiring will be routed to overhead of officer and behind switch panel #6. ALL SPEAKER WIRES AND ANTENNA IS TO BE DROPPED OFF HERE, NO EXCEPTIONS.

The quantity and location of the speakers will be one (1) pair of 5.25" speakers in the cab and one (1) pair of 5.25" speakers in the crew cab.

The type and location of the antenna will be a roof-mounted rubber antenna located in an open space, on the cab roof.

MOUNTING BRACKET FOR PUSH BUTTON CONTROLS

There will be a mounting bracket provided within easy reach of the officer next to the defrost air intake for the mounting of push button controls. The mounting bracket will be large enough to mount (3) three buttons (air horn, mechanical siren, siren brake) controls vertically, one in front of the other. The bracket will be fabricated from smooth aluminum and will be painted to match the cab interior.

INFORMATION CENTER

An information center employing a 7.00" diagonal touch screen color LCD display will be encased in an ABS plastic housing.

The information center will have the following specifications:

- Operate in temperatures from -40 to 185 degrees Fahrenheit
- An Optical Gel will be placed between the LCD and protective lens
- Five weather resistant user interface switches
- Grey with black accents
- Sunlight Readable
- Linux operating system
- Minimum of 1000nits rated display
- Display can be changed to an available foreign language
- A LCD display integral to the cab gauge panel will be included as outlined in the cab instrumentation area.
- Programmed to read US Customary

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GENERAL SCREEN DESIGN

Where possible, background colors will be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background will be used.

If a caution or warning situation arises the following will occur:

- An amber background/text color will indicate a caution condition
- A red background/text color will indicate a warning condition
- The information center will utilize an "Alert Center" to display text messages for audible alarm tones. The text messages will be written to identify the item(s) causing the audible alarm to sound. If more than one (1) text message occurs, the messages will cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" will change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color will be shown for all alert center messages.
- A label for each button will exist. The label will indicate the function for each active button for each screen. Buttons that are not utilized on specific screens will have a button label with no text or symbol.

HOME/TRANSIT SCREEN

This screen will display the following:

- Vehicle Mitigation (if equipped)
- Water Level (if equipped)
- Foam Level (if equipped)
- Seat Belt Monitoring Screen
- Tire Pressure Monitoring (if equipped)
- Digital Speedometer
- Active Alarms

ON SCENE SCREEN

This screen will display the following and will be auto activated with pump engaged (if equipped):

- Battery Voltage
- Fuel
- Oil Pressure
- Coolant Temperature
- RPM
- Water Level (if equipped)
- Foam Level (if equipped)
- Foam Concentration (if equipped)

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- Water Flow Rate (if equipped)
- Water Used (if equipped)
- Active Alarms

VIRTUAL BUTTONS

There will be four (4) virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.

PAGE SCREEN

The page screen will display the following and allow the user to progress into other screens for further functionality:

- Diagnostics
 - Faults
 - Listed by order of occurrence
 - Allows to sort by system
 - Interlock
 - Throttle Interlocks
 - Pump Interlocks (if equipped)
 - Aerial Interlocks (if equipped)
 - PTO Interlocks (if equipped)
 - Load Manager
 - A list of items to be load managed will be provided. The list will provide a description of the load.
 - The lower the priority numbers the earlier the device will be shed should a low voltage condition occur.
 - The screen will indicate if a load has been shed (disabled) or not shed.
 - "At a glance" color features are utilized on this screen.
 - Systems
 - Command Zone
 - Module type and ID number
 - Module Version
 - Input or output number
 - Circuit number connected to that input or output
 - Status of the input or output
 - Power and Constant Current module diagnostic information
 - Foam (if equipped)
 - Pressure Controller (if equipped)
 - Generator Frequency (if equipped)

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- Live Data
 - General Truck Data
- Maintenance
 - Engine oil and filter
 - Transmission oil and filter
 - Pump oil (if equipped)
 - Foam (if equipped)
 - Aerial (if equipped)
- Setup
 - Clock Setup
 - Date & Time
 - 12 or 24 hour format
 - Set time and date
 - Backlight
 - Daytime
 - Night time
 - Sensitivity
 - Unit Selection
 - Home Screen
 - Virtual Button Setup
 - On Scene Screen Setup
 - Configure Video Mode
 - Set Video Contrast
 - Set Video Color
 - Set Video Tint
- Do Not Move
 - The screen will indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices will be indicate
 - Driver Side Cab Door
 - Passenger's Side Cab Door
 - Driver Side Crew Cab Door
 - Passenger's Side Crew Cab Door
 - Driver Side Body Doors
 - Passenger's Side Body Doors
 - Rear Body Door(s)
 - Ladder Rack (if applicable)
 - Deck Gun (if applicable)
 - Light Tower (if applicable)
 - Hatch Door (if applicable)

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- Stabilizers (if applicable)
 - Steps (if applicable)
- Notifications
 - View Active Alarms
 - Shows a list of all active alarms including date and time of the occurrence is shown with each alarm
 - Silence Alarms - All alarms are silenced
- Timer Screen
- HVAC (if equipped)
- Tire Information (if equipped)
- Ascendant Set Up Confirmation (if equipped)

Button functions and button labels may change with each screen.

VEHICLE DATA RECORDER

There will be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.

The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.

The vehicle data recorder will be capable of recording the following data via hardwired and/or CAN inputs:

- Vehicle Speed - MPH
- Acceleration - MPH/sec
- Deceleration - MPH/sec
- Engine Speed - RPM
- Engine Throttle Position - % of Full Throttle
- ABS Event - On/Off
- Seat Occupied Status - Yes/No by Position
- Seat Belt Buckled Status - Yes/No by Position
- Master Optical Warning Device Switch - On/Off
- Time - 24 Hour Time
- Date - Year/Month/Day

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Seat Belt Monitoring System

A seat belt monitoring system (SBMS) will be provided on the Command Zone™ color display. The SBMS will be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following:

- Seat Occupied & Buckled = Green LED indicator illuminated
- Seat Occupied & Unbuckled = Red LED indicator with audible alarm
- No Occupant & Buckled = Red LED indicator with audible alarm
- No Occupant & Unbuckled = No indicator and no alarm

The seat belt monitoring screen will become active on the Command Zone color display when:

- The home screen is active:
 - and there is any occupant seated but not buckled or any belt buckled with an occupant.
 - and there are no other Do Not Move Apparatus conditions present. As soon as all Do Not Move Apparatus conditions are cleared, the SBMS will be activated.

The SBMS will include an audible alarm that will warn that an unbuckled occupant condition exists and the parking brake is released, or the transmission is not in park.

INTERCOM SYSTEM

There will be digital, dual radio interface, intercom located [Location 1] in the cab. The front panel will have master volume, and squelch controls with illuminated indicators, allowing for independent level setting of radio and auxiliary audio devices.

There will be two (2) radio listen only / transmit controls, allowing for simulcast interoperability with select, monitor, receive, and transmit indicators. There will be two (2) auxiliary audio inputs with select, and receive indicators.

There will be one (1) wireless base station for up to five (1-5) headset users provided in the cab. Wired headset jacks will be provided for the driver, officer and two (2) crew positions, located at both forward facing seats. The driver and officer will have remote transmit buttons located per 28750 01-03.

The wireless base station will have a 100' to 1100' range, line of sight. Objects between the transmitter and receiver affect range.

The following Firecom components will be provided:

- One (1) 5200D Intercom
- One (1) WB505R wireless base station (1-5 wireless positions)
- Two (2) DM-1 Remote transmit buttons
- Four (4) HM-10 Interior headset jacks

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- All necessary power and station cabling

RADIO INTERFACE CABLE

One (1) Fire Com MR52X, part #110-5136-30 radio/intercom interface cable will be provided and installed.

HEADSETS

Five (5) Fire Com model FH-54 push-on/push-off intercom with listen-only headsets will be provided.

WIRELESS CONVERTIBLE, RADIO TRANSMIT ONLY HEADSET

There will be four (4) Firecom™, Model FHW-507, wireless convertible style, radio transmit headset(s) provided. A heavy duty, coiled 12 volt charging pigtail with plug will be provided to be determined at construction review.

Each headset will feature:

- Noise cancelling electric microphone
- Flexible microphone boom
- Ear seals with 20 dB noise reduction
- Radio Push To Transmit button (Left or Right Side)
- Wireless Bluetooth technology
- Rechargeable battery operates for 24 hours on a full charge
- IP-65 when worn

INTERCOM SYSTEM REMOTE HEAD

A Firecom, Model 5200DRH remote intercom head will be provided and mounted overhead of the officer in switch panel #5.

HEADSET HANGERS

There will be four (4) headset hanger(s) installed driver's seat, officer's seat, driver's side outboard forward facing seat and passenger's side outboard forward facing seat. The hanger(s) will meet NFPA 1901, Section 14.1.11, requirement for equipment mounting.

REMOTE DASH MOUNT RADIO PTT BUTTON

There will be two (2) Fire-Com, DM-1, dash mounted radio Push-To-Talk button(s) provided for the DS inbetween park brake and command zone screen. PS in 4-button-bracket, in the bottom position. The PTT's should be removed from the firecom box when installed. positions.

TWO WAY RADIO SPEAKER INSTALLATION

There will be two (2) customer supplied two way radio speakers sent to the apparatus manufacturers preferred third party installer to be installed For the cab two way radio speaker to be forward of drop down headliner on Captain's side (area marked with blue tape by Precision). The 2nd speaker will be

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mounted at the turntable console on the area. The customer would like it on the bracket forward of the console that holds the aerial 2 way intercom, it should be inboard of that speaker (where the switched junction box is on the photo that is attached). The outside speaker will be sent by the customer tomorrow to Precision it will be an amplified, weatherproof external speaker..

Specific shipping requirements will be followed.

RADIO ANTENNA MOUNT

There will be two (2) standard antenna-mounting base(s), Model MATM, with 17 feet of coax cable and weatherproof cap provided for a two (2)-way radio installation. The standard mount will be located on the cab roof, just to the rear of the officer seat and the additional mount(s) will be located all antenna cables are to run down the PS of cab and terminate behind the officer's seat. The cable(s) will be routed see diagram for details on spacing of antenna stubs on cab roof .

GPS MULTIBAND ANTENNA

There will be one (1) PCTel, Model GPSHPDLTEMIMO-SF, stud mount, low profile, multi-band antenna installed on the cab roof.

The antenna will feature:

- Two (2) 4G LTE elements for 698-960MHz and 1710-2700MHz with 17.00' of Pro-Flex Plus 195 coaxial cable, each with SMA male connectors, routed to the mobile data terminal (MDT)
- Dual (MIMO 802.11n) broadband WiFi elements, 2.4-2.5GHz and 4.9-5.9GHz, with 17.00' of Pro-Flex Plus 195 coaxial cable, each with RP-SMA male connectors installed, routed to the WiFi device
- One (1) GPS element with 17.00' of RG-174/U coaxial cable with SMA male connector, routed to the mobile data terminal (MDT)

VEHICLE CAMERA SYSTEM

There will be a color vehicle camera system provided with the following:

- One (1) camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse

The camera images will be displayed on the driver's Command Zone™, color display. Audio from the microphone on the active camera will be emitted by an amplified speaker with volume control in the blank panel to the right of the steering column.

The following components will be included:

- One (1) SV-CW134639CAI, camera
- One (1) amplified speaker (if applicable)

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- All necessary cables

VEHICLE CAMERA GUARD

There will be one (1) aluminum treadplate guard(s) fastened over the vehicle camera(s) located center rear .

ELECTRICAL POWER CONTROL SYSTEM

The primary power distribution will be located forward of the officer's seating position and be easily accessible while standing on the ground for simplified maintenance and troubleshooting. Additional electrical distribution centers will be provided throughout the vehicle to house the vehicle's electrical power, circuit protection, and control components. The electrical distribution centers will be located strategically throughout the vehicle to minimize wire length. For ease of maintenance, all electrical distribution centers will be easily accessible. All distribution centers containing fuses, circuit breakers and/or relays will be easily accessible.

Distribution centers located throughout the vehicle will contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.

Circuit protection devices, which conform to SAE standards, will be utilized to protect electrical circuits. All circuit protection devices will be rated per NFPA requirements to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers will be Type-I automatic reset (continuously resetting). When required, automotive type fuses will be utilized to protect electronic equipment. Control relays and solenoid will have a direct current rating of 125 percent of the maximum current for which the circuit is protected per NFPA.

SOLID-STATE CONTROL SYSTEM

A solid-state electronics based control system will be utilized to achieve advanced operation and control of the vehicle components. A fully computerized vehicle network will consist of electronic modules located near their point of use to reduce harness lengths and improve reliability. The control system will comply with SAE J1939-11 recommended practices.

The control system will operate as a master-slave system whereas the main control module instructs all other system components. The system will contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system will utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.

For increased reliability and simplified use the control system modules will include the following attributes:

- Green LED indicator light for module power

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- Red LED indicator light for network communication stability status
- Control system self test at activation and continually throughout vehicle operation
- No moving parts due to transistor logic
- Software logic control for NFPA mandated safety interlocks and indicators
- Integrated electrical system load management without additional components
- Integrated electrical load sequencing system without additional components
- Customized control software to the vehicle's configuration
- Factory and field re programmable to accommodate changes to the vehicle's operating parameters
- Complete operating and troubleshooting manuals
- USB connection to the main control module for advanced troubleshooting

To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules will meet the following specifications:

- Module circuit board will meet SAE J771 specifications
- Operating temperature from -40C to +70C
- Storage temperature from -40C to +70C
- Vibration to 50g

IP67 rated enclosure (Totally protected against dust and also protected against the effect of temporary immersion between 15 centimeters and one (1) meter)

Operating voltage from eight (8) volts to 16 volts DC

The main controller will activate status indicators and audible alarms designed to provide warning of problems before they become critical.

CIRCUIT PROTECTION AND CONTROL DIAGRAM

Copies of all job-specific, computer network input and output (I/O) connections will be provided with each chassis. The sheets will indicate the function of each module connection point, circuit protection information (where applicable), wire numbers, wire colors and load management information.

ON-BOARD ADVANCED/VISUAL ELECTRICAL SYSTEM DIAGNOSTICS

The on-board information center will include the following diagnostic information:

- Text description of active warning or caution alarms
- Simplified warning indicators
- Amber caution indication with intermittent alarm
- Red warning indication with steady tone alarm

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All control system modules, with the exception of the main control module, will contain on-board visual diagnostic LEDs that assist in troubleshooting. The LEDs will be enclosed within the sealed, transparent module housing near the face of the module. One LED for each input or output will be provided and will illuminate whenever the respective input or output is active. Color-coded labels within the modules will encompass the LEDs for ease of identification. The LED indicator lights will provide point of use information for reduced troubleshooting time without the need for an additional computer.

TECH MODULE WITH WIFI

An in cab module will provide WiFi wireless interface and data logging capability. The WiFi interface will comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module will provide an external antenna connection allowing a line of site communication range of up to 300 feet with a roof mounted antenna.

The module will transmit a password protected web page to a WiFi enabled device (i.e. most smart phones, tablets or laptops) allowing two levels of user interaction. The firefighter level will allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level will allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system.

The data logging capability will record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data will be recorded at the time the fault occurs. The data logger will provide up to 2 Gigabytes of data storage.

A USB connection will be provided on the Tech Module. It will provide a means to download data logger information and update software in the device.

PROGNOSTICS

A software based vehicle tool will be provided to predict remaining life of the vehicles critical fluid and events.

The system will send automatic indications to the Command Zone, color display and/or wireless enabled device to proactively alert of upcoming service intervals.

Prognostics will include:

- Engine oil and filter
- Transmission oil and filter
- Pump oil (if equipped)
- Foam oil (if equipped)
- Aerial oil and filter (if equipped)

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ADVANCED DIAGNOSTICS

An advanced, Windows-based, diagnostic software program will be provided for this control system. The software will provide troubleshooting tools to service technicians equipped with a Windows-based computer or wireless enabled device.

The service and maintenance software will be easy to understand and use and have the ability to view system input/output (I/O) information.

INDICATOR LIGHT AND ALARM PROVE-OUT SYSTEM

A system will be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.

VOLTAGE MONITOR SYSTEM

A voltage monitoring system will be provided to indicate the status of the battery system connected to the vehicle's electrical load. The system will provide visual and audible warning when the system voltage is below or above optimum levels.

The alarm will activate if the system falls below 11.8 volts DC for more than two (2) minutes.

DEDICATED RADIO EQUIPMENT CONNECTION POINTS

There will be three (3) studs provided in the primary power distribution center located in front of the officer for two-way radio equipment.

- The studs will consist of the following:
- 12-volt 40-amp battery switched power
- 12-volt 60-amp ignition switched power
- 12-volt 60-amp direct battery power

There will also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.

ENHANCED SOFTWARE

The solid-state control system will include the following software enhancements:

All perimeter lights and scene lights (where applicable) will be deactivated when the parking brake is released.

Cab and crew cab dome lights will remain on for ten (10) seconds for improved visibility after the doors close. The dome lights will dim after ten (10) seconds or immediately if the vehicle is put into gear.

Cab and crew cab perimeter lights will remain on for ten (10) seconds for improved visibility after the doors close. The dome lights will dim after ten (10) seconds or immediately if the vehicle is put into gear.

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EMI/RFI PROTECTION

To prevent erroneous signals from crosstalk contamination and interference, the electrical system will meet, at a minimum, SAE J551/2, thus reducing undesired electromagnetic and radio frequency emissions. An advanced electrical system will be used to ensure radiated and conducted electromagnetic interference (EMI) or radio frequency interference (RFI) emissions are suppressed at their source.

The apparatus will have the ability to operate in the electromagnetic environment typically found in fire ground operations to ensure clean operations. The electrical system will meet, without exceptions, electromagnetic susceptibility conforming to SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter. The vehicle OEM, upon request, will provide EMC testing reports from testing conducted on an entire apparatus and will certify that the vehicle meets SAE J551/2 and SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter requirements. Component and partial (incomplete) vehicle testing is not adequate as overall vehicle design can impact test results and thus is not acceptable by itself.

EMI/RFI susceptibility will be controlled by applying appropriate circuit designs and shielding. The electrical system will be designed for full compatibility with low-level control signals and high-powered two-way radio communication systems. Harness and cable routing will be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.

ELECTRICAL

All 12-volt electrical equipment installed by the apparatus manufacturer will conform to modern automotive practices. All wiring will be high temperature crosslink type. Wiring will be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers will be provided which conform to SAE Standards. Wiring will be color, function and number coded. Function and number codes will be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors will be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.

Electrical wiring and equipment will be installed utilizing the following guidelines:

1. All holes made in the roof will be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, will be used when fastening equipment to the underside of the cab roof.
2. Any electrical component that is installed in an exposed area will be mounted in a manner that will not allow moisture to accumulate in it. Exposed area will be defined as any location outside of the cab or body.
3. Electrical components designed to be removed for maintenance will not be fastened with nuts and bolts. Metal screws will be used in mounting these devices. Also a coil of wire will be

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provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.

4. Corrosion preventative compound will be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections will require this compound in the plug to prevent corrosion and for easy separation (of the plug).
5. All lights that have their sockets in a weather exposed area will have corrosion preventative compound added to the socket terminal area.
6. All electrical terminals in exposed areas will have silicon (1890) applied completely over the metal portion of the terminal.

All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, will be furnished. Rear identification lights will be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads will be protected from damage by installing a false bulkhead inside the rear compartments.

An operational test will be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.

The results of the tests will be recorded and provided to the purchaser at time of delivery.

BATTERY SYSTEM

Six (6) 12 volt, AC Delco, group 31 batteries that include the following features will be provided:

- 950 CCA, cold cranking amps
- 190 amp reserve capacity
- High cycle
- Rating of 5700 CCA at 0 degrees Fahrenheit
- 1140 minutes of reserve capacity
- Threaded Studs

Each battery case will be a black polypropylene material with a vertically ribbed container for increased vibration resistance. The cover will be manifold vented with a central venting location to allow a 45 degree tilt capacity.

The inside of each battery will consist of a "maintenance free" grid construction with poly wrapped separators and a flooded epoxy bottom anchoring for maximum vibration resistance.

BATTERY SYSTEM

There will be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.

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MASTER BATTERY SWITCH

There will be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.

An indicator light will be provided on the instrument panel to notify the driver of the status of the battery system.

BATTERY COMPARTMENTS

The batteries will be stored in well-ventilated compartments that are located under the cab and bolted directly to the chassis frame. The battery compartments will be constructed of 3/16" steel plate and be designed to accommodate a maximum of three (3) group 31 batteries in each compartment. The compartments will include formed fit heavy-duty roto-molded polyethylene battery tray inserts with drains on each side of the frame rails. The batteries will be mounted inside of the roto-molded trays.

JUMPER STUDS

One (1) set of battery jumper studs with plastic color-coded covers will be installed on the battery box on the driver's side. This will allow enough room for easy jumper cable access.

BATTERY CHARGER/ AIR COMPRESSOR

There will be a Kussmaul Pump Plus 1200, Model 091-9-12V-1200194-WT-XX, 40 amp single output battery charger/air compressor with Model 091-194-IND-WT-XX watertight digital display provided. The color of the charge indicator will be red.

The 12-volt air compressor will be installed to maintain the air system pressure when the vehicle is not in use.

The battery charger will be wired to the AC shoreline inlet.

Battery charger/compressor will be in P6 high on back wall.

The battery charger indicator will be located in the driver's step area.

KUSSMAUL AUTO EJECT FOR SHORELINE

There will be one (1) Kussmaul Model 091-55-15-120, 15 amp 120 volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus without the use of the generator.

The shoreline inlet(s) will include red weatherproof flip up cover(s).

There will be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.

The shoreline(s) will be connected to Kussmaul 1200 battery charger AND Kussmaul model 091-92-12 "battery saver - low ripple".

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There will be a mating connector body supplied with the loose equipment.

There will be a label installed near the inlet(s) that state the following:

- Line Voltage
- Current Rating (amps)
- Phase
- Frequency

The shoreline receptacle will be located on the driver side of cab, to the front of cab door.

BATTERY SAVER

There will be one (1) Kussmaul, Model 091-195-12, 20 amp battery saver will be provided.

The battery saver will be located in the cab next to the battery charger/air compressor (which is in the false floor area of option #199533, center forward facing EMS cabinet). The Kussmaul battery saver is wired to the positive "+" side of the battery charger.

The items to be connected to this device are 20A 12V spare wiring in front of officer for TABLET WIRING.

This device will be connected to the 120 volt AC shoreline inlet.

This device will be connected to the chassis batteries to charge items when the shoreline is not plugged in.

ALTERNATOR

A Delco Remy®, Model 55SI, alternator will be provided. It will have a rated output current of 430 amps, as measured by SAE method J56. The alternator will feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator will be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.

FAN, ELECTRICAL COOLING

There will be one (1) 120v electrical cooling fan(s) with guard to exhaust the heat buildup due to the battery chargers stored in the EMS cabinet, located center forward facing crew cab seat riser per 28750 01-03. The fan(s) will vent the heat outward from the compartment.

Fan(s) to be wired to the auto transfer switch so they will run at all times, either off the shoreline, or off the generator.

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ELECTRONIC LOAD MANAGER

An electronic load management (ELM) system will be provided that monitors the vehicles 12-volt electrical system, automatically reduces the electrical load in the event of a low voltage condition, and automatically restores the shed electrical loads when the low voltage condition expires. This ensures the integrity of the electrical system. The ELM will monitor the vehicle's voltage while at the scene (parking brake applied).

The system will include the following features:

- System voltage monitoring.
- Load Managing will not start for 30 seconds after engine start up.
- Five (5) minute cycle time, to prevent load activation and quick deactivation.
- Automatic High Idle Activation, to activate before any electric loads are shed and deactivate with the service brake.
- If enabled, Load Man Hi-Idle On will display on the information center. Sixteen available electronic load shedding levels.
- Priority levels can be set for individual outputs.
- Individual switch "on" indicator to flash when the particular load has been shed.
- The information center shows system voltage.
- Green indicator in the Indicator Light display, Load Manager is active.

The information center includes a "Load Manager" screen indicating the following:

- Load managed items list, with priority levels and item condition.
- Individual load managed item condition:
- ON = not shed
- SHED = shed
- OVRD = overridden

SEQUENCER

A warning light sequencer will be provided that automatically turns the emergency lights on and off in a preset sequence.

The sequencer will be wired in conjunction with the emergency master light switch.

When the switch is activated the lights will be turned on in sequence one by one at 1/2 second intervals thereby protecting the alternator from power surges. Sequenced light switch LED's will flash while waiting for activation.

When turned off, the same process will deactivate the warning lights in sequence to allow a gradual decrease in alternator output, rather than dumping the load.

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The on/off switch for this system will be removed.

HEADLIGHTS

There will be four (4) JW Speaker Evolution, Model 8630, 5.60" round LED lights with polycarbonate lenses mounted in the front chrome trim housing on each side of the cab grille:

- one (1) part number 0549941, low and high beam installed in the outside position on the driver's side.
- one (1) part number 0549941, low and high beam installed in the inside position on the driver's side.
- one (1) part number 0549941, low and high beam installed in the inside position on the passenger's side.
- one (1) part number 0549941, low and high beam installed in the outside position on the passenger's side.

The LEDs included in the outer section of the headlights will be controlled per the following:

- activated when the battery switch is on, the ignition switch is on and the parking brake is released.
- deactivated when the headlight switch is on or the high-beam flash is on or when the parking brake is applied

DIRECTIONAL LIGHTS

There will be two (2) Whelen 600® series, LED combination directional/marker lights provided. The lights will be located on the outside cab corners, next to the headlights.

The color of the lenses will be the same color as the LED's.

INTERMEDIATE LIGHT

There will be two (2) Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, one (1) each side, in the rear fender panel. The light will double as a turn signal and marker light.

CAB CLEARANCE/MARKER/ID LIGHTS

There will be seven (7) amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:

- Three (3) amber LED identification lights will be installed in the center of the cab above the windshield.
- Two (2) amber LED clearance lights will be installed, one (1) on each outboard side of the cab above the windshield.
- Two (2) amber LED marker lights will be installed, one (1) on each side above the cab doors.

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REAR CLEARANCE/MARKER/ID LIGHTING

There will be three (3) Truck-Lite®, Model 33050R, LED lights used as identification lights recessed and located at the rear of the apparatus per the following:

- As close as practical to the vertical centerline
- Centers spaced not less than 6.00" or more than 12.00" apart
- Red in color
- All at the same height

There will be two (2) Truck-Lite, Model 33050R, LED lights recessed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:

- To indicate the overall width of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the rear
- All at the same height

There will be two (2) Truck-Lite, Model 33050R, LED lights recessed on the side of the apparatus as marker lights as close to the rear as practical per the following:

- To indicate the overall length of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the side
- All at the same height

There will be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

There will be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

Per FMVSS 108 and CMVSS 108 requirements.

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MARKER LIGHTS

There will be one (1) pair of amber and red LED marker lights with rubber arm, located at the rear most lower corner of the body. The amber lens will face the front and the red lens will face the rear of the truck.

These lights will be activated with the running lights of the vehicle.

REAR FMVSS LIGHTING

The rear stop/tail and directional LED lighting will consist of the following:

- Two (2) Whelen®, Model M6BTT, red LED stop/tail lights
- Two (2) Whelen, Model M6T, amber LED arrow turn lights

The lights shall be provided with color lenses.

The lights will be mounted in a polished combination housing.

There will be two (2) Whelen Model M6BUW, LED backup lights provided in the tail light housing.

LICENSE PLATE BRACKET

There will be one (1) license plate bracket mounted on the rear of the body.

A white LED light will illuminate the license plate. A polished stainless steel light shield will be provided over the light that will direct illumination downward, preventing white light to the rear.

LIGHTING BEZEL

There will be two (2) Whelen, Model M6FCV4P, four (4) place chromed ABS housings with Pierce logos provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.

BACK-UP ALARM

A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse will be provided. The device will sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.

WARNING LIGHT FLASH PATTERN

The flash pattern of all the exterior warning lights will be set to meet the certified California, Title XIII flash pattern by either the light manufacturer's default flash pattern or by a conversion change to the certified flash pattern.

CAB PERIMETER SCENE LIGHTS

There will be four (4) Amdor LumaBar H2O, Model AY-9500-020, 20.00" white LED strip lights provided, one (1) for each cab door.

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These lights will be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.

BODY PERIMETER SCENE LIGHTS

There will be two (2) Amdor LumaBar H2O™, Model AY-9500-020, 20.00" 12 volt DC LED strip lights provided.

The lights will be mounted in the following locations:

- One (1) light under the driver's side turntable access steps
- One (1) light under the passenger's side turntable access steps

The perimeter scene lights will be activated when a switch within reach of the driver is activated and the parking brake is applied.

ADDITIONAL PERIMETER LIGHTS

There will be two (2) lights Amdor® Luma Bar® H2O, Model AY-9500-020, 20.00" LED perimeter light sticks provided one (1) light under compartment D6 and one (1) light under compartment P6.

The lights will be activated by the same means as the body perimeter lights.

STEP LIGHTS

All steps on the apparatus will be illuminated per the current edition of NFPA 1901 and will match the turn table access step lights.

12 VOLT LIGHTING, PS BODY

There will one (1) Whelen Model PFS2P, 16,200 lumens 12 volt DC LED light(s) installed on the apparatus located, above the forward corner of P6.

The painted parts of this light assembly to be black

The light(s) to be installed on vertically adjustable bracket(s).

The lights will be controlled by a switch at the driver's side switch panel.

The light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING, DS BODY

There will one (1) Whelen Model PFS2*, 16,200 lumens 12 volt DC LED light(s) installed on the apparatus located, above the forward corner of D6.

The painted parts of this light assembly to be black

The light(s) to be installed on vertically adjustable bracket(s).

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The lights will be controlled by a switch at the driver's side switch panel.

The light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING, VISOR

There will be two (2) HiViz FIRETECH, Model FT-MB2-18-FT, 20.50" 12 volt DC LED light(s) with FireTech combination spot/flood optics and adjustable pedestal mounting brackets, will be mounted one (1) below each forward facing lightbar on either side of the aerial device.

The color of the light housing will be black.

The light(s) selected above will be controlled by the following:

- a switch at the driver's side switch panel
- a switch at the passenger's side switch panel
- no additional switch location
- no additional switch location

These light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING, PS

There will be one (1) Whelen, Model PCPSM1*, 12 volt surface mounted LED combination spot/flood light(s) located one (1) on the passenger's side of cab centered above the EMS exterior access door. The lights will be mounted with black flange(s).

The light(s) selected above will be controlled by the following:

- a switch at the driver's side switch panel
- no additional switch location
- panel 9, row 2, pos 1
- no additional switch location

These light(s) may be load managed when the parking brake is set.

12 VOLT LIGHTING, DS

There will be one (1) Whelen, Model PCPSM1*, 12 volt surface mounted LED combination spot/flood light(s) located one (1) on the driver's side of cab centered above the exterior access door (D8). The lights will be mounted with black flange(s).

The light(s) selected above will be controlled by the following:

- a switch at the driver's side switch panel
- no additional switch location

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- no additional switch location
- no additional switch location

These light(s) may be load managed when the parking brake is set.

REAR SCENE LIGHTS

There will be two (2) Whelen, Model M9LZC, LED scene lights with chrome trim bezels installed at the rear of the apparatus. These lights will be installed between 30.00" and 102.00" above the ground.

The lights will be controlled by a switch at the driver's side switch panel and by a cup switch at the driver's side rear bulkhead.

WALKING SURFACE LIGHTS

There will be Two (2) Amdor Model LumaBar, white 12 volt DC LED strip light provided in the cargo area to illuminate the interior surface of the cargo area. Light(s) will be located under the top flange of the cargo area.

The light will be activated when the body step lights are on.

CARGO AREA

The cargo area will be fabricated of .125" 5052 aluminum with a tensile strength range of 31,000 to 38,000 psi.

The sides will not form any portion of the fender compartments.

The upper and rear edges of the side panels will have a double break for rigidity.

The cargo area will be located ahead of the ladder turntable.

Flooring of the cargo area will be aluminum treadplate.

TURNTABLE STEPS

Access to the turntable will be provided by two step assemblies with swing-down steps, one on each side of the truck.

The access steps will be located on each side, just behind the compartmentation.

All steps will be designed to match the 53.50" special height of the rear body. The bottom edge of the rear wall has been raised from standard to increase the angle of departure.

The swing down step mechanism will be constructed of brushed aluminum with bright aluminum steps with Morton Cass inserts.

The step well will be lined with bright aluminum treadplate to act as scuffplates.

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The bottom step will have a step height not exceeding 24.00" from the ground to the top surface of the step at any time.

Handrails will be provided on each side of each set of access steps.

The steps will be connected to the "Do Not Move Truck" indicator in the cab.

STEP LIGHTS

There will be three (3) white LED step lights provided for each set of aerial turntable access steps.

In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.

The step lights will be actuated by the aerial master switch in the cab.

SMOOTH ALUMINUM REAR WALL

The rear wall will be smooth aluminum.

TOW EYES

Two (2) rear painted tow eyes will be located at the rear of the apparatus and will be mounted directly to the torque box. The inner and outer edges of the tow eyes will be radiused.

REAR SUBSTRUCTURE RAISED

The rear substructure will be raised 5". This will allow for a greater angle of departure.

COMPARTMENTATION

Compartmentation will be fabricated of 0.125" 5052 aluminum. The side compartments are an integral assembly with the rear fenders. Fully enclosed rear wheel housings will be provided to prevent rust pockets and for ease of maintenance. Due to the severe loading requirements of this aerial, a method of compartment body support suitable for the intended load will be provided.

The backbone of the support system will be the chassis frame rail, which is the strongest component of the chassis and is designed for sustaining maximum loads.

A support system will be used which will incorporate a floating substructure by using Neoprene Elastomer isolators to allow the body to remain rigid while the chassis goes through its natural flex. The isolators will have a broad range of proven viability in vehicular applications, be of a fail safe design, and allow for all necessary movement in three (3) transitional and rotational modes. This will result in a 500 lb equipment rating for each lower compartment of the body.

The compartmentation in front of the rear axle will include a 3.00" steel support assemblies which are bolted to the chassis frame rails. A steel framework will be mounted to the body above these support

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assemblies connected to the support assemblies with isolators. There will be one (1) support assembly mounted to each chassis frame rail.

The compartmentation behind the rear axle will include 3.00" steel support assemblies which are bolted to the chassis frame rails and extend underneath to the outside edge of the body. The support assembly will be coated to isolate the dissimilar metals before it is bolted to the body. There will be one (1) support assembly mounted to each chassis frame rail.

Compartment flooring will be of the sweep out design with the floor higher than the compartment door lip. The compartment door openings are framed by flanging the edges in 1.75" and bending out again 0.75" to form an angle. Drip protection is provided over all door openings by means of bright aluminum extrusion or formed bright aluminum treadplate. Side compartment tops will be covered with bright aluminum treadplate with a 1.00" rolled over edge on the front, rear and outward side. The covers are fabricated in one (1) piece and have the corners welded. A bright aluminum treadplate cover will be provided on the front wall of each side compartment. All screws and bolts which protrude into a compartment will have acorn nuts at the ends to prevent injury.

The body design has been fully tested. Proven engineering and test techniques such as finite element analysis, model analysis, stress coating and strain gauging have been performed with special attention given to fatigue life and structural integrity of the compartment body and substructure.

AGGRESSIVE WALKING SURFACE

All exterior surfaces designated as stepping, standing, and walking areas will comply with the required average slip resistance of the current NFPA standards.

LOUVERS

All body compartments will have a minimum of one (1) set of louvers stamped into a wall to provide the proper airflow inside the compartment and to prevent water from dripping into the compartment. These louvers will be formed into the metal and not added to the compartment as a separate plate.

COMPARTMENT IN PLACE OF PUMP

A roll-up door compartment will be installed in place of the pump and pump panel.

It will be approximately 54.25" wide x 75.50" high x 24.50" deep in the lower area and transversed in the top portion of the compartment.

The door opening will be approximately 51.25" wide x 67.88" high.

The transverse portion of the compartment will vary depending on chassis and engine combination.

The top, center portion of the compartment will be recessed for installation of a hydraulic generator and reservoir.

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The recess will be 18.75" deep x full length of the compartment and as wide as the frame rails.

DRIVER SIDE COMPARTMENTATION

A full height roll-up door compartment, ahead of the rear wheels, will be 41.75" wide x 64.00" high x 24.25" deep inside with a clear door opening of 38.75" wide x 67.88" high. The additional top 11.50" of compartment height is designed to match the cab height. This additional 11.50" from the standard height will be approximately 14.00" deep.

One (1) roll-up door compartment, above the fender compartments and over the rear axles, will be provided. The compartment will be 72.13" wide x 33.25" high x 24.25" deep inside with an approximate clear door opening of 63.75" wide x 37.00" high. The additional top 11.50" of compartment height is designed to match the cab height. This additional 11.50" from the standard height will be approximately 14.00" deep.

A compartment with a single pan stainless steel, lift up door will be located above the front stabilizer. The compartment will be 34.50" high x 18.00" wide x 24.25" deep with a door opening of 28.75" high x 12.00" wide. The additional top 11.50" of compartment height is designed to match the cab height. This additional 11.50" from the standard height will be approximately 14.00" deep.

A full height roll-up door compartment behind the rear wheels will be 43.75" wide x 49.25" high x 21.25" deep. The clear door opening will be 40.75" wide x 41.62" high.

One (1) lift-up door compartment below the turntable will be provided. The compartment will be 39.38" wide x 18.38" high x 21.25" deep inside with a door opening of 35.00" wide x 14.88" high.

PASSENGER SIDE COMPARTMENTATION

A full height roll-up door compartment ahead of the rear wheels will be 41.75" wide x 64.00" high x 24.25" deep inside with a clear door opening of 38.75" wide x 67.88" high. The additional top 11.50" of compartment height is designed to match the cab height. This additional 11.50" from the standard height will be approximately 14.00" deep.

One (1) roll-up door compartment will be provided above the fender compartments and over the rear axles. The compartment will be 72.13" wide x 33.25" high x 24.25" deep inside with a clear door opening of 63.75" wide x 37.00" high. The additional top 11.50" of compartment height is designed to match the cab height. This additional 11.50" from the standard height will be approximately 14.00" deep.

A compartment with a single pan stainless steel, lift up door will be located above the front stabilizer. The compartment will be 18.00" wide x 34.50" high x 24.25" deep with a door opening of 12.00" wide x 28.75" high. The additional top 11.50" of compartment height is designed to match the cab height. This additional 11.50" from the standard height will be approximately 14.00" deep.

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A full height, roll-up door compartment, behind the rear wheels, will be 43.75" wide x 49.25" high x 21.25" deep. The clear door opening will be 40.75" wide x 41.62" high.

One (1) lift-up door compartment below the turntable will be provided. The compartment will be 39.38" wide x 18.38" high x 21.25" deep inside with a door opening of 35.00" wide x 14.88" high.

SIDE COMPARTMENT ROLL-UP DOORS

There will be eight (8) compartment doors installed on the side compartments, double faced, aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by AMDOR™ brand roll-up doors.

Door(s) will be constructed using 1.00" extruded double wall aluminum slats which will feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats will be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain will be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats will be mounted in reusable slat shoes with positive snap-lock securement.

Each slat will incorporate weather tight recessed dual durometer seals. One (1) fin will be designed to locate the seal within the extrusion. The second will serve as a wiping seal which will also allow for compression to prevent water ingress.

The doors will be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.

Bottom panel flange of roll-up door will be equipped with two (2) cut-outs to allow for easier access with gloved hands.

A stainless steel lift bar to be provided for opening the door and located at the bottom of each door with latches on the outer extrusion of the door frame. A ledge to be supplied over lift bar for additional area to aid in closing the door. The lift bar will be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers will include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.

All injection molded roll-up door wear components will be constructed of Type 6 nylon.

Each roll-up door will have a 3.00 inch diameter balancer/tensioner drum to assist in lifting the door.

The header for the roll-up door assembly will not exceed 4.00".

A heavy-duty magnetic switch will be used for control of open compartment door warning lights.

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BODY MODIFICATION FROM STANDARD

The compartment above the stabilizers (if applicable) will be decreased due to deeper stabilizer depth. The height of the compartment will decrease 4.00" and the compartment door will move up 4.00" higher. The stabilizer frame opening as well as the stabilizer pan will be increased in height by 6.00".

COMPARTMENT BLISTER

A blister in the compartment ahead of the rear wheels will be provided to clear the front bracket of the Firemaax suspension. This blister will take away some of the interior area of the compartment.

COMPARTMENT DOOR MODIFICATION

There will be two (2) compartment doors that will be provided with the capability to open past 90 degrees.

The door(s) to receive this modification are located D2, P2.

DOOR GUARD

There will be eight (8) compartment doors that will include a guard/drip pan designed to protect the roll-up door from damage when in the retracted position and contain any water spray. The guard will be fabricated from stainless steel and installed D1, D3, D4, D6, P1, P3, P4 and P6.

KEYED LOCK(S)

A keyed lock will be furnished for one (1) compartment door. The compartmentation, to have a keyed lock, will be P1.

PULL STRAP, DOOR

There will be eight (8) compartment doors provided with pull straps. The compartment door(s) to be provided with a pull strap will be D3, D4, P3, D5, P4, P5, D6 and P6.

SCUFFTAPE

Six (6) scuffplates will be provided for the around all exposed edges for all fender compartments on each side of the body . Each scufftape will be 3- M poly.

ROLL-UP DOOR TRIM

The exterior of the aluminum trim around the door opening will be painted to match job color.

There will be eight (8) compartments with the trim painted.

COMPARTMENT LIGHTING

There will be ten (10) compartment(s) with two (2) white 12 volt DC LED compartment light strips. The dual light strips will be centered vertically along each side of the door framing. There will be two (2) light strips per compartment. The dual light strips will be in compartment(s): D1, D2, D3, D4, D6, P1, P2, P3, P4 and P6.

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Any remaining compartments without light strips will have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light will have a number 1076 one filament, two wire bulb.

Opening the compartment door will automatically turn the compartment lighting on.

COMPARTMENT LIGHTING, ADDITIONAL

There will be two (2) Pierce LED light(s) provided in the compartment(s) located D5 and P5. Each light will be 9.00" in length.

Opening the compartment door(s) will automatically turn the compartment lighting on.

COMPARTMENT LIGHTING, ADDITIONAL

There will be one (1) Pierce LED strip light(s) provided in the compartment(s) located under the rear ledge RECESSED. Light to be centered above the ladder storage door and are to turn on automatically whenever the rear ladder storage door is opened. . Each light will be 36.00" in length.

Opening the compartment door(s) will automatically turn the compartment lighting on.

MOUNTING TRACKS

There will be eight (8) sets of tracks for mounting shelf(s) in D3, D1, P1, P3, D4, P4, D6 and P6. These tracks will be installed vertically to support the adjustable shelf(s), and will be full height of the compartment. The tracks will be unpainted with a natural finish.

ADJUSTABLE SHELVES

There will be one (1) shelf provided P1. The shelf construction will consist of .188" aluminum with a dual action finish. A capacity rating will not be available on this item due to a reduced side height being less than 2.00". Each shelf will be infinitely adjustable by means of a threaded fastener, which slides in a track. Each shelf will as wide and as deep as the compartment space shall allow.

The shelves will be held in place by .12" thick stamped plated brackets and bolts.

The side height of the shelf/shelves will be as follows:

- Front: 1.00" high
- Rear: 2.00" high
- Left & Right Sides: 2.00" high

ADJUSTABLE SHELVES

There will be one (1) shelf with a capacity of 500 lb provided.

The shelf construction will consist of .188" aluminum with a dual action finish with 2.00" sides.

Each shelf will be infinitely adjustable by means of a threaded fastener, which slides in a track.

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The shelves will be held in place by .12" thick stamped plated brackets and bolts.

The location(s) will be in D1 in the upper third.

ADJUSTABLE SHELVES

There will be one (1) shelf provided D6 above partition. The shelves will have no capacity rating due to a specially designed floor. There will be a section in the middle of the shelf floor that is constructed of expanded metal. This will allow the contents of the shelf to be viewed from below. The remainder of the shelf construction will consist of .188" D/A sanded aluminum with 2.00" sides. Each shelf will be infinitely adjustable by means of a threaded fastener, which slides in a track.

The shelves will be held in place by .12" thick stamped plated brackets and bolts.

ADJUSTABLE SHELVES

There will be one (1) shelf provided P6 above the vertical partition. The shelves will have no capacity rating due to a specially designed floor. There will be a section in the middle of the shelf floor that is constructed of expanded metal. This will allow the contents of the shelf to be viewed from below. The remainder of the shelf construction will consist of .188" D/A sanded aluminum with 2.00" sides. Each shelf will be fixed in its location in the compartment.

The shelves will be held in place by .12" thick stamped plated brackets and bolts.

SLIDE-OUT ADJUSTABLE HEIGHT TRAY

There will be one (1) slide-out tray provided.

Each tray will have 2.00" high sides and a capacity rating of up to 500 lb in the extended position. The tray will be constructed of aluminum DA finished.

Each tray will be designed to be as wide and as deep as the compartment space will allow.

Each tray will be mounted on a pair of side mounted slides. The slide mechanisms will have ball bearings for ease of operation and years of dependable service. The slides will be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.

An automatic lock will be provided for both the in and out tray positions. The lock trip mechanism will be located at the front of the tray and will be easily operated with a gloved hand.

The tray(s) will be located D4 below tilt tray and above slideout work surface .

SLIDE-OUT ADJUSTABLE HEIGHT TRAY

There will be two (2) slide-out trays provided.

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Each tray will have 2.00" high sides and will be half (1/2) the depth of the transverse compartment. The capacity rating of the tray will be 500 lb in the extended position.

Each tray will be mounted on a pair of side mounted slides. The slide mechanisms will have ball bearings for ease of operation and years of dependable service. The slides will be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.

An automatic lock will be provided for both the in and out tray positions. The lock trip mechanism will be located at the front of the tray and will be easily operated with a gloved hand.

The tray(s) will be located (1) in D6 aft of partition (below 2/3 depth tilt tray) and (1) in P6 aft of partition (below 1/3 depth tilt tray).

FINISH, TRAYS AND SHELVES

All trays and shelves will be unpainted aluminum with a DA finish.

SLIDE-OUT/TILT-DOWN TRAY

There will be two (2) slide-out trays provided.

The bottom of each tray will constructed of 0.188" thick aluminum while special aluminum extrusions will be utilized for the tray sides, ends, and tracks. The corners will be welded to form a rigid unit.

Each tray will be as wide and as deep as the compartment space will allow.

A spring loaded lock will be provided on each side at the front of the tray. Releasing the locks will allow the tray to slide out approximately two-thirds (2/3) of its length from the stowed position and tip 15 degrees down from horizontal. The tray will be equipped with ball bearing rollers for smooth operation.

Rubber padded stops will be provided for the tray in the extended position.

The capacity rating of the tray will be a minimum of 200lb in the extended position.

The vertical position of the tray within the compartment will be adjustable.

The tray(s) will be located (1) in D3 and (1) in D6 aft of partition and as high as possible (above the 1/2 depth slideout tray). Add cable that connects the black levers for easier operation. .

SLIDE-OUT/TILT-DOWN TRAY

There will be two (2) slide-out trays provided.

The bottom of each tray will constructed of 0.188" thick aluminum while special aluminum extrusions will be utilized for the tray sides, ends, and tracks. The corners will be welded to form a rigid unit.

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The tray will be half depth of the transverse compartment and be maximum width for each compartment.

A spring loaded lock will be provided on each side at the front of the tray. Releasing the locks will allow the tray to slide out approximately two-thirds (2/3) of its length from the stowed position and tip 30 degrees down from horizontal. The tray will be equipped with ball bearing rollers for smooth operation.

Rubber padded stops will be provided for the tray in the extended position.

The capacity rating of the tray will be a minimum of 215 lb in the extended position.

The vertical position of the tray within the compartment will be adjustable.

The tray(s) will be located (1) in D6 aft of the partition below 2/3 depth tilt tray and above 1/2 depth slideout tray and (1) in P6 aft of the partition below 1/3 depth tilt tray and above 1/2 depth slideout tray (see detailed compartment drawing).

SLIDE-OUT/TILT-DOWN TRAY

There will be two (2) slide-out trays provided.

The bottom of each tray will constructed of 0.188" thick aluminum while special aluminum extrusions will be utilized for the tray sides, ends, and tracks. The corners will be welded to form a rigid unit.

Each tray will be as wide and as deep as the compartment space will allow.

A spring loaded lock will be provided on each side at the front of the tray. Releasing the locks will allow the tray to slide out approximately two-thirds (2/3) of its length from the stowed position and tip 30 degrees down from horizontal. The tray will be equipped with ball bearing rollers for smooth operation.

Rubber padded stops will be provided for the tray in the extended position.

The capacity rating of the tray will be a minimum of 215 lb in the extended position.

The vertical position of the tray within the compartment will be adjustable.

The tray(s) will be located (1) in P3 and (1) in P6 aft of partition and as high as possible (above the 1/2 depth slideout tray) .

SLIDE-OUT/TILT-DOWN TRAY

There will be three (3) slide-out trays provided.

The bottom of each tray will constructed of 0.188" thick aluminum while special aluminum extrusions will be utilized for the tray sides, ends, and tracks. The corners will be welded to form a rigid unit.

Each tray will be as wide and as deep as the compartment space will allow.

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A spring loaded lock will be provided on each side at the front of the tray. Releasing the locks will allow the tray to slide out approximately two-thirds (2/3) of its length from the stowed position and tip 30 degrees down from horizontal. The tray will be equipped with ball bearing rollers for smooth operation.

Rubber padded stops will be provided for the tray in the extended positions.

The capacity rating of the tray will be a minimum of 215 lb in the extended position.

The vertical position of the tray within the compartment will be adjustable.

The tray(s) will be located (1) in D4 directly below electric reel, and (2) in P4 directly below electric reel .

SLIDE-OUT FLOOR MOUNTED TRAY

There will be two (2) floor mounted slide-out tray(s) provided D6 and P6. A capacity rating will not be available on this tray due to a reduced side height being less than 2.00". The tray(s) will be constructed of a minimum .13" aluminum with welded corners. The finish will be unpainted aluminum with a DA finish.

The tray(s) will be designed for maximum compartment width and depth.

The side height of the tray(s) will be as follows:

- Front: 1.00" high
- Rear: 2.00" high
- Left and Right Sides: 2.00" high

There will be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides will have a safety factor rating of 2.

To ensure years of dependable service, the slides will be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.

To ensure years of easy operation, the slides will require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file will have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance will be provided upon request.

Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.

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SLIDE-OUT FLOOR MOUNTED TRAY

There will be one (1) floor mounted slide-out tray(s) provided P1. A capacity rating will not be available on this tray due to a reduced side height being less than 2.00". The tray(s) will be constructed of .19" aluminum with welded corners. The finish will be unpainted aluminum with a DA finish.

The side height of the tray(s) will be as follows:

- Front: 1.00" high
- Rear: 2.00" high
- Left Side: 2.00" high
- Right side: 2.00" high

Slides will be equipped with ball bearings for ease of operation and years of dependable service. The slides will be located on the sides of the tray so that the tray can be located as close to the compartment floor as possible.

Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.

SLIDE-OUT FLOOR MOUNTED TRAY

There will be three (3) floor mounted slide-out tray(s) with 2.00" sides provided one (1) in D1 with a CLEAR INSIDE DIMENSION of 29.50" and as close to the right wall as possible (turtle tile will be on the floor forward of the floor tray), (1) in D4 and (1) in P4. Each tray will be rated for up to 500lb in the extended position. The tray(s) will be constructed of a minimum .13" aluminum with welded corners. The finish will be unpainted aluminum with a DA finish.

The trays will be designed for maximum compartment width and depth.

There will be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides will have a safety factor rating of 2.

To ensure years of dependable service, the slides will be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.

To ensure years of easy operation, the slides will require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file will have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance will be provided upon request.

Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.

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TRANSVERSE TWO (2) WAY SLIDE-OUT TOOLBOARD

An aluminum toolboard will be provided for use in a transverse side body compartment. The toolboard will be constructed of 0.19" thick aluminum that is DA finished. The toolboard will be provided with 0.20" diameter holes in a pegboard pattern with 1.00" centers between holes. A 1.00" x 1.00" aluminum tube frame will be welded to the edge of the pegboard.

The toolboard will span the full depth of the transverse compartment and will be designed to be as tall as possible to fit in the specified mounting location.

The toolboard will be mounted inside a 6.00" wide x 3.00" high, utility style slide-out tray. The bottom of the tray will be constructed of 0.19" thick aluminum while special aluminum extrusions will be utilized for the tray sides, ends and tracks. The corners will be welded.

The tray will be supported with a minimum of six (6) ball bearing rollers. The toolboard and tray will slide out two thirds (2/3) of its length to either side of the apparatus. Positive locks will be provided for toolboard in both the stowed and extended positions.

The toolboard will be rated for a maximum of 500 lb in the extended position.

A total of One (1) toolboard(s) will be provided. The toolboard(s) will be located D6/P6 forward of the partition.

1.00" RETAINING LIP

A 1.00" lip will be provided (1) each in D6 and P6 above the floor extension and aft of the vertical partition - full width to contain the equipment. The lip will be finished to match the compartment interior.

BRACKET REAR OF BODY

An 8.00" deep, full width bright aluminum treadplate bracket will be provided at the rear of the body, above the torque box roll door. The rear outside corners of the bracket will be tapered to provide additional clearance. The bracket will be provided to mount lights, cameras, or other accessories.

SLIDE-OUT ADJUSTABLE HEIGHT WORK SURFACE

There will be a total of two (2) slide-out work surface(s) provided. Each tray will include a two (2) section hinged, work surface that covers the entire top of the tray. Each section of the work surface will be hinged at the rear of the tray with a single continuous hinge. The work surface will open to 90 degrees. The tray will have 3.00" high sides, providing a storage area below the work surface.

The tray will have a capacity of up to 500 lb in the extended position.

Each tray will be as deep as possible for a standard depth compartment and as wide as possible for the specified mounting location.

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Each tray will be mounted on a pair of side mounted slides. The slide mechanisms will have ball bearings for ease of operation and years of dependable service. The slides will be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.

An automatic lock will be provided for both the in and out tray positions. The lock trip mechanism will be located at the front of the tray and will be easily operated with a gloved hand.

The slide-out work surface(s) will be located one (1) in D4 and one (1) in P1 - see detail compartment sketch for exact location in conjunction with other items in each compartment.

TRANSVERSE COMPARTMENT OVER TORQUE BOX

one (1) upper forward body compartments will be transverse over the torque box, to the opposite side of the body. The transverse area will be as large as possible. The D3/P3 will include this transverse option.

COMPARTMENT DUST FILTERS

A total of six (6) body compartment louvers will have a removable dust filter installed to restrict road dirt from easily entering the compartment and will be installed D1, D4, D6, P1, P4 and P6.

COMPARTMENT MATTING

Black rubber matting will be provided in two (2) compartments. The locations are D4, P1 on top of work surfaces (cover for trays) per job 28750 01-03.

The matting will be .13" thick with corrugated top ribs.

MATTING, COMPARTMENT SHELVING

Turtle Tile compartment matting will be provided in 20 shelves. The locations are, all adjustable shelves (2 total) and all slide-out trays (17 total).

The color of the Turtle Tile will be red.

MATTING, COMPARTMENT FLOOR

Turtle Tile compartment matting will be provided in nine (9) compartments on the compartment floor. The locations are, D1 forward of the floor tray, D2, D3, D5, D6 above the floor extension, P2, P3, P5 and P6 above the floor extension.

The Turtle Tile will be red and the leading edge of the matting will include the beveled edge. The beveled edge will be red .

PARTITION IN TRANSVERSE COMPARTMENT

One (1) partition will be bolted in D6/P6 rearward of slide out toolboard tray. Each partition will be the full vertical height of the compartment.

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FLOOR EXTENSION

There will be a compartment floor extension provided. The floor extension will extend from the area over the frame rails to within an inch of the compartment door. The floor extension will have a 1.00" vertical downturned lip and no return flange.

A total of two (2) will be provided and located D6 and P6.

RUB RAIL

Bottom edge of the side compartments will be trimmed with a bright aluminum extruded rub rail.

Trim will be 2.12" high with 1.38" flanges turned outward for rigidity.

The rub rails will not be an integral part of the body construction, which allows replacement in the event of damage.

BODY FENDER CROWNS

Stainless steel fender crowns will be provided around the rear wheel openings.

A rubber welting will be provided between the body and the crown to seal the seam and restrict moisture from entering.

HANDRAILS

Two (2) handrails will be provided mounted one (1) on catwalk above D3 per print and one (1) on catwalk above P3 per print.

FOUR AIR BOTTLE STORAGE COMPARTMENT

A total of one (1) air bottle compartment will be provided and located on the driver's side centered between the tandem rear wheels. The air bottle compartment will consist of individual bins each designed to hold an air bottle with a maximum diameter of 7.63" and a maximum depth of 26.00".

Each compartment will hold a total of four (4) air bottles. The compartment will accommodate three (3) bottles across the top and one (1) centered below. The bottom air bottle will be accessible only when the top center bottle is removed and the hinged partition over the bottom bottle is lifted up. Each bottle will be separated by a partition.

Flooring will be rubber lined and have a drain hole. A drop down door with support cables with pair of Southco non-locking C2 chrome lever latches will be provided for each compartment. The door will be painted stainless steel. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

AIR BOTTLE COMPARTMENT STRAP

Straps will be provided in the air bottle compartment(s) to help contain the air bottles. The straps will wrap around the neck of each bottle and attach to the wall of the compartment.

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SINGLE AIR BOTTLE STORAGE

There will be two (2) air bottle compartments provided on the driver's side behind the rear wheel and on the passenger's side behind the rear wheel. The air bottle compartment will be 7.75" diameter round x 26.00" deep.

A painted stainless steel triangular shaped door with a Southco non-locking C2 chrome lever latch will be provided to contain the air bottle. The door will cover the fuel fill and the air bottle opening. Inside the compartment, black rubber matting will be provided. There will be a drain hole provided.

A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

AIR BOTTLE COMPARTMENT STRAP

Straps will be provided in the air bottle compartment(s) to help contain the air bottles. The straps will wrap around the neck of each bottle and attach to the wall of the compartment.

CORNER FENDER PANEL DOUBLE AIR BOTTLE STORAGE

A total of one (1) air bottle compartment will be provided in the upper corner(s) of the passenger side fender panel. The compartment(s) will be located on the passenger's side ahead of the rear wheel. The air bottle compartment(s) will be in the form of a round tube (7.75" diameter maximum) and of adequate depth (26.00" maximum) to accommodate different size air bottles. The tubes will be mounted separately in a diagonal fashion, one above the other.

Flooring will be rubber lined and have a drain hole. A triangular shaped vertically hinged door and a Southco non-locking C2 chrome lever latch will be provided for each compartment. The door will be painted stainless steel. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

AIR BOTTLE COMPARTMENT STRAP

Straps will be provided in the air bottle compartment(s) to help contain the air bottles. The straps will wrap around the neck of each bottle and attach to the wall of the compartment.

DOUBLE WIDE EXTINGUISHER STORAGE

One (1) double wide extinguisher compartment will be provided between the tandem axles of the body. A total of one (1) extinguisher compartments will be provided passenger's side. The extinguisher compartment will be adequate depth to accommodate different size extinguishers. The compartment will be 17.00" wide x 8.50" high. Flooring will be rubber lined and be furnished with a drain hole. A painted stainless steel, vertically hinged full width door with a Southco non-locking C2 chrome lever latch will be provided to contain the extinguishers. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

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November 2, 2017 (Quote Number 91102-17A)

AIR BOTTLE STORAGE (SINGLE)

A quantity of one (1) air bottle compartment, 7.75" in diameter x 26.00" deep, will be provided on the driver side forward of the rear wheels. A painted stainless steel door with a Southco non-locking C2 chrome lever latch will be provided to contain the air bottle and also cover the DEF tank opening. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting will be provided.

AIR BOTTLE COMPARTMENT STRAP

Straps will be provided in the air bottle compartment(s) to help contain the air bottles. The straps will wrap around the neck of each bottle and attach to the wall of the compartment.

AIR BOTTLE HOLDERS

Two (2) brackets will be provided for mounting air bottles. Each bracket will be a Ziamatic, model KD-UN-6-30-2-SFCRS, and contain a collision restraint strap. It will be mounted on tracks and used for adjusting the location of the bracket within the compartment. Install SHIP LOOSE.

EXTENSION LADDER

There will be two (2) 35' two (2) section aluminum Duo-Safety Series 1200-A extension ladder(s) provided.

AERIAL EXTENSION LADDER

There will be one (1) 24' two (2) section aluminum Series 900-A extension ladder(s) provided and located in the aerial torque box.

ROOF LADDERS

There will be one (1) 20' roof, aluminum, Series 875-A provided.

There will be two (2) 16' aluminum Duo-Safety Series 875-A roof ladder(s) provided.

There will be one (1) 10' roof, aluminum, Series 775-A provided.

ADDED ROOF LADDER

There will be one (1) 14' aluminum roof, Series 775 ladder, special 16.00" width, with roof hooks on both ends provided.

This ladder is non compliant to NFPA 1931, "*Standard on Design of and Design Verification Tests for Fire Department Ground Ladders*", section 4.2.2 which states the minimum inside width between beams for single ladders shall be 16.00".

Per Fire Department specification request of this ladder, the apparatus will be non compliant to NFPA 1901 standards at time of contract execution.

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Specifications for one (1) 105' Velocity Aerial Ladder

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AERIAL ATTIC EXTENSION LADDER

There will be one (1) 14' Fresno aluminum Duo-Safety Series 701 attic extension ladder(s) provided.

AERIAL FOLDING LADDER

There will be one (1) 12' aluminum Duo-Safety Series 585-A folding ladder(s) provided.

GROUND LADDER STORAGE

The ground ladders are stored within the torque box and are removable from the rear.

Ladders will be enclosed to prevent road dirt and debris from fouling or damaging the ladders.

The ladders rest in full length stainless steel slides and are arranged in such a manner that any one ladder can be removed without having to move or remove any other ladder.

An AMDOR rollup door will be provided at the rear, double faced, aluminum construction, satin aluminum and manufactured by AMDOR manufacturing. The latching mechanism will consist of a full length lift bar lock with latches on the outer extrusion of the door frame.

A stainless plate with a two bend flange and a stainless steel hinge will be provided to secure the aerial ladder complement. The plate assembly will be mounted to the bottom of the entrance of the torque box ladder storage area.

When the plate is vertical, it will secure the ladders and prevent them from migrating to the rear of the apparatus. When the plate is down and not securing the ladders, the roll-up door can not close, which will activate the "Open Door Indicator Light" within the cab. The roll-up door together with hinge friction will secure the plate in place during driving operations.

A door guard will be provided to prevent tools inside the torque box from damaging the roll-up door.

LADDER STORAGE LIGHTING

There will be 21.00" white 12 volt DC LED strip lights in the torque box ladder storage compartment. One (1) light will be provided on each side of the ladder storage area.

The lights will be activated when the ladder storage compartment door is opened.

LADDER RACK MODIFICATION

The standard ladder rack will be modified. The rearward most bracketry will be moved forward approximately 11.00" leaving the ladder trays exposed. The ladders will deadhead in their trays prior to the last rung of the exposed ladder passing the rearward brackets.

DURA-SURF LADDER SLIDES

Black Dura-Surf friction reducing material will be added to all vertical and horizontal surfaces of the stainless steel, where the ladder could come in contact with the ladder storage rack.

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NESTED LADDER STORAGE

There will be nested ladders on the right side of the ladder storage compartment.

16' PIKE POLE

One (1) pike pole, 16' long Nupla with a fiberglass "I" beam handle will be provided and located torque box.

14' PIKE POLE

One (1) pike pole, 14' long Nupla with a fiberglass "I" beam handle will be provided and located torque box.

12' PIKE POLE

There will be one (1) Fire Hooks Unlimited Model RH-12' New York Roof Hook with a fiberglass shaft and pry end provided. The pike pole(s) will be stored in tubular holders located in the ground ladder storage compartment.

10' PIKE POLE

Two (2) Fire Hooks Unlimited, New York Roof Hook , 10' long roof hook with steel shaft and pry end will be provided.

8' PIKE POLE

One (1) pike pole, Fire Hooks Unlimited, Model RH 8, 8' long roof hook, with a steel handle and pry end will be provided and located torque box.

RUBBISH HOOK

Three (3) 8 foot Nupla RH-8D Ventilation Hook(s): Fiberglass w/"D" handle

PIKE POLE STORAGE

Stainless steel U-shaped trough be used for the storage of three (3) pike poles, with D-handle style grip, will be provided and installed in the torque box for the Fire Hooks Unlimited New York hooks with Pry End (8', 10' and 12').

TRASH HOOK STORAGE

There will be two (2) stainless steel U-shaped trough(s) provided for storage of D-handle style trash hook(s). The trough(s) will be installed torque box (for option #89413).

The individual pike pole storage slots will be labeled 8', 10', 12', 14', 16'.

PIKE POLE STORAGE

PVC tubing will be used for the storage of two (2) pike poles and will be located in torque box for 14' and 16' pike poles. If the head of a pike pole can come in contact with a painted surface, a stainless steel scuffplate will be provided.

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FOLDING STEPS

Two (2) additional folding steps will be located on the rear bulkhead of compartment D3 and P3 per job 29770. The step(s) will be bright finished, non-skid, with a luminescent coating. The luminescent coating is rechargeable from any light source and can hold a charge for up to 24 hours. Each step will incorporate an LED light to illuminate the stepping surface. The step(s) can be used as a hand hold with two openings wide enough for a gloved hand.

HERCULES SELF CONTAINED FOAM SYSTEM TEST

A complete functional test of the Hercules self contained foam system and its associated components will be conducted to ensure the system works as intended.

60 GALLON AGENT TANK

A 60 gallon Hercules self contained foam system will be installed above the torque box.

AGENT TANK

The agent tank will be constructed of steel and hold 60 gallons of pre-mix foam agent. The tank will be painted with an epoxy paint on both the interior and exterior of the tank. The tank will be manufactured in accordance with ASME standards. The water fill will be located under compartment D6 as far forward as possible. It will terminate with 1.50" FNST-S adapter and plug. A check valve will be installed as close as possible to the water fill connection so that water does not run back out the water tank fill when the hose is disconnected. A 40 mesh water strainer will be installed as close as possible to the water fill connection to allow easy maintenance and prevent debris from entering the tank. Check valves will be installed to isolate the water and foam tank fill if necessary. A drain for the water fill line will be provided to prevent freezing if necessary.

One (1) 1.50" MNST x 0.75" FGHT-S adapter and one(1) 0.75" MGHT plug will be shipped with loose equipment for the customer to use garden hose connections on the water fill if necessary.

One (1) 0.75" swing handle water overflow valve will be located under the compartment next to the 1.50" water fill connection.

The 60 gallon tank will have one (1) 1.50" outlet provided on the tank to allow plumbing to the discharge(s).

Two (2) 0.75" tank drains will be provided. Either tank drain can be used to drain the entire tank. One (1) will be located near the agent tank within easy reach of the end user. One (1) will be located below compartment D6.

FOAM REFILL

One (1) 0.75" FGHT-S connection and plug will be supplied on top of the agent tank to allow the end user to fill the system with foam.

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A fill funnel and storage bracket will be shipped with loose equipment to allow filling of the system without spilling foam. The storage bracket will be finished the same color as the interior of compartment D6.

AIR SUPPLY

The self contained foam system will be powered by one (1) 6000 psi, 510cu ft breathing air bottle. The air bottle size will be 56.00" tall x 9.00" in diameter. The air bottle will be located above the torque box near the agent tank. The air bottle will be easily removable for hydro testing.

DISCHARGE SYSTEM

A blend-air valve will be conveniently located to adjust the foam expansion ratio from 5:1 to 20:1 or more. The pressurization will be a quick opening valve on the low pressure side of the regulator allowing the system to be stored and transported without pressure until needed for fire fighting (Approx activation time is 5 sec).

Two (2) Akron manually controlled outlets will be provided off the main agent tank. One (1) 1.50" outlet will be located under compartment D6 as far forward as possible. One (1) 1.50" outlet will be located under compartment P6 as far forward as possible.

SELF CONTAINED FOAM SYSTEM CONTROLS

The self contained foam system will have one (1) operator control panel for operating this system. The control panel will be painted/finished the same color as the body compartment interior. The control panel will be located in compartment D6 as far forward and high as possible. It will be organized in a vertical layout in front of the aerial boom notch within the D6 compartment. The control panel will not stick out past the aerial boom notch so it does not effect the transverse storage area within compartment D6. The body compartment lighting will illuminate the controls on the operators panel.

The control panel will have the following items on it.

- One (1) pressure gauge for the breathing air bottle.
- One (1) pressure gauge for the main agent tank pressure.
- One (1) pressure gauge for the regulator pressure.
- One (1) remote activation switch (this switch will open all of the air bottles to charge the main tank).
- One (1) adjustable high flow pressure regulator (0-400PSI).
- One (1) breathing air refill fitting (CGA677) with check valve for refilling the 6000psi breathing air bottle.

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PERFORMANCE

The unit will be capable of discharging up to 1200 gpm of finished foam product. Duration time will be from 90 seconds to 6 minutes depending on the discharge rate. Foam coverage distance will be 75 feet or more.

TAGS

Tags will be provided stating how to use the foam system as well as the recommended foam percentage rates to run in this system. Tags will be provided at the operator control panel and at the agent tank.

FOAM STORAGE BOTTLES

There will be two (2) 32 oz semi-clear foam storage bottles installed in a metal holder with a cover, located above the torque box near the agent tank. The metal bottle holder will be painted the same color as the upper portion of the rear body.

HERCULES SELF CONTAINED FOAM SYSTEM TRAINING

The fire department will order one (1) vehicle with this self contained foam system. A demonstration will be provided at the apparatus manufacturers facility on the operation of the system.

This demonstration will include:

- A review of the self contained foam system emphasizing key areas
- A walk around review of the system components on the finished truck
- A hands-on the self contained system start-up and discharge session

AIR HORN SYSTEM

One (1) chrome finish, stutter tone, Grover, Model 1510, air horn approximately 24.50" long will be provided and recessed in the front bumper. The air horn system will be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve will be installed to prevent the loss of air in the brake system.

Air Horn Location

The air horn will be located on the left side of the bumper, towards the outside.

AIR HORN CONTROL

The air horns will be actuated by a chrome push button located on the officer's side of the engine tunnel and by the horn button in the steering wheel. The driver will have the option to control the air horns or the chassis horns from the horn button by means of a selector switch located on the instrument panel.

ELECTRONIC SIREN

A Whelen, Model: 295SLSC1, electronic siren with detachable noise canceling microphone will be provided.

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This siren to be active when the battery switch is on.

Electronic siren head will be recessed in the overhead console above the engine tunnel on the officer side.

The electronic siren will be controlled on the siren head only. No horn button or foot switches will be provided.

SPEAKER

There will be one (1) Whelen®, Model SA315P, black nylon composite, 100-watt, speaker with through bumper mounting brackets and polished stainless steel grille provided. The speaker will be connected to the siren amplifier.

The speaker will be recessed in the left side of the front bumper, just outside of the frame rail.

MECHANICAL SIREN

There will be a Federal Signal Model Q2B mechanical siren furnished on the front of the apparatus. The siren will be energized from a battery direct circuit through a 2-gauge cable to a solenoid that is energized from the emergency master switch. Additional customer selectable controls will be included for the momentary activation of this siren.

There will be a momentary siren brake switch provided in the cab on the switch panel.

The mechanical siren will be mounted recessed in the front grille. The siren mounting will include a reinforcement plate.

MECHANICAL SIREN CONTROLS

The mechanical siren will be actuated by one (1) foot switch located on the driver's side as far to the left (close to the door) as possible and a push button switch on the officer's side.

SIREN MICROPHONE EXTENSION

There will be a Whelen®, Model CCMICX20, 20 foot microphone extension provided.

A second siren brake switch will be installed on the officer side dash of cab. The switch will be a chrome push button style.

FRONT ZONE UPPER WARNING LIGHTS

There will be two (2) 21.50" Whelen Freedom IV LED lightbars mounted on the cab roof, one (1) on each side, above the driver's and passenger's door, facing forward.

The driver's side lightbar will include the following:

- One (1) red flashing LED module in the outside end position.

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- One (1) red flashing LED module in the outside front corner position.
- One (1) 795 LED traffic light controller set to national standard high priority in the front positions.
- One (1) red flashing LED module in the inside front corner position.

The passenger's side lightbar will include the following:

- One (1) red flashing LED module in the inside front corner position.
- One (1) red flashing LED module in the inside front position.
- One (1) red flashing LED module in the outside front position.
- One (1) red flashing LED module in the outside front corner position.
- One (1) red flashing LED module in the outside end position.

There will be clear lenses and colored filters included on the lightbar.

The following switches may be installed in the cab on the switch panel to control the lightbars:

- a switch to control the flashing LED modules
- the traffic light controller will be by a cab switch with emergency master control
- there will be no momentary switch to activate the traffic light controller

The red flashing LED module in the inside front position may be load managed when the parking brake is applied.

FRONT ZONE LOWER WARNING LIGHTS

There will be two (2) Whelen, Model M6* LED flashing warning lights and two (2) Whelen, Model M6R LED steady burning warning lights installed on the cab face, above the headlights, mounted in a common bezel.

- The driver's side front outside warning light to be red.
- The driver's side front inside steady burning warning light to be red.
- The passenger's side front inside steady burning warning light to be red.
- The passenger's side front outside warning light to be red.

All four (4) lights will include a lens color that is the same as the LED's.

There will be a switch located in the cab, on the switch panel, to control the four (4) lights.

The driver's side inside lights may be load managed if colored or disabled if white, when the parking brake is set.

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HEADLIGHT FLASHER

The high beam headlights will flash alternately between the left and right side.

There will be a switch installed in the cab on the switch panel to control the high beam flash. This switch will be live when the battery switch and the emergency master switches are on.

The flashing will automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.

SIDE ZONE LOWER LIGHTING

There will be six (6) Whelen®, flashing LED warning lights with chrome trim installed per the following:

- Two (2) Model M6V2**, combination warning and cornering/scene lights located, one (1) each side on the front cab corner. The side front lights to be red. The white LEDs will be provided as a cornering/scene light and mounted no higher than the low beam headlights.
- Two (2) Model M6**, lights located one each side aft of crew cab doors. The side middle lights to be red.
- Two (2) Model M6V2**, combination warning and cornering/scene lights located one each side in between the tandem, behind air bottle storage. The side rear lights to be red.
- The color of the lenses for the warning lights will be the same color as the LED's.

There will be a switch in the cab on the switch panel to control the warning lights.

The white LED cornering/scene lights will be wired so they activate and cancel when the battery switch is on, the headlight switch is on and with the directional light activation.

These LED cornering/scene lights will not be activated when the 4-way flashers are activated.

The LED cornering/scene lights may be load managed when the parking brake is applied.

INTERIOR CAB DOOR WARNING LIGHTS

There will be four (4) Whelen®, Model 0S*00FCR, amber LED flashing lights provided, one (1) light located inside of each cab and crew cab door pan, as far to the outside as practical. Each light will be activated by the door jam switch of the associated door. The lights will flash whenever the corresponding door is open.

SIDE WARNING LIGHTS

There will be two (2) pairs of Whelen, Model RS*03ZCR, LED flashing lights provided in the rub rail centered, one (1) each below D1, D4, P1 and P4.

The color of the lights will be amber.

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The lights will be provided with a Whelen, Model RFLANGEC, chrome plated ABS flange.

The lights will be provided with a clear lens.

These lights will be activated with the side warning switch.

The lights may be load managed when the parking brake is applied.

REAR ZONE LOWER LIGHTING

There will be two (2) Whelen®, Model M6*, LED flashing warning lights will be located at the rear of the apparatus.

- The driver's side rear light to be amber
- The passenger's side rear light to be red

Both lights will include a lens that is the same color as the LED's.

There will be a switch located in the cab on the switch panel to control the lights.

REAR OF HOSE BED WARNING LIGHTS

There will be two (2) Whelen® Rota-Beam™, Model R316*F, 4.00" high x 7.19" wide beacons with the same color domes as the LEDs provided.

The rear zone upper lights to be red on the driver side and amber on the officer side.

There will be a switch located in the cab on the switch panel to control the beacons.

TRAFFIC DIRECTING LIGHT

There will be one (1) Whelen®, Model TAL65, 36.00" long x 2.87" high x 2.25" deep, amber LED traffic directing light installed at the rear of the apparatus.

The Whelen, Model TACTL5, control head will be included with this installation.

The auxiliary warning mode will be activated with the emergency master switch.

This traffic directing light will be mounted on top of the body below the turntable with a treadplate box at the rear of the apparatus.

The traffic directing light control head will be located in the driver side overhead switch panel in the right panel position.

ELECTRICAL SYSTEM GENERAL DESIGN FOR ALTERNATING CURRENT

The following guidelines will apply to the 120/240 VAC system installation:

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General

Any fixed line voltage power source producing alternating current (ac) line voltage will produce electric power at 60 cycles plus or minus 3 cycles.

Except where superseded by the requirements of NFPA 1901, all components, equipment and installation procedures will conform to NFPA 70, National Electrical Code (herein referred to as the NEC).

Line voltage electrical system equipment and materials included on the apparatus will be listed and installed in accordance with the manufacturer's instructions. All products will be used only in the manner for which they have been listed.

Grounding

Grounding will be in accordance with Section 250-6 "Portable and Vehicle Mounted Generators" of the NEC. Ungrounded systems will not be used. Only stranded or braided copper conductors will be used for grounding and bonding.

An equipment grounding means will be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.

The grounded current carrying conductor (neutral) will be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor will be colored white or gray in accordance with Section 200-6 (Means of Identifying Grounding Conductors) of the NEC.

In addition to the bonding required for the low voltage return current, each body and driving or crew compartment enclosure will be bonded to the vehicle frame by a copper conductor. This conductor will have a minimum amperage rating of 115 percent of the nameplate current rating of the power source specification label as defined in Section 310-15 (amp capacities) of the NEC. A single conductor properly sized to meet the low voltage and line voltage requirements will be permitted to be used.

All power source system mechanical and electrical components will be sized to support the continuous duty nameplate rating of the power source.

Operation

Instructions that provide the operator with the essential power source operating instructions, including the power-up and power-down sequence, will be permanently attached to the apparatus at any point where such operations can take place.

Provisions will be made for quickly and easily placing the power source into operation. The control will be marked to indicate when it is correctly positioned for power source operation. Any control device

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used in the drive train will be equipped with a means to prevent the unintentional movement of the control device from its set position.

A power source specification label will be permanently attached to the apparatus near the operator's control station. The label will provide the operator with the following information:

- Rated voltage(s) and type (ac or dc)
- Phase
- Rated frequency
- Rated amperage
- Continuous rated watts
- Power source engine speed

Direct drive (PTO) and portable generator installations will comply with Article 445 (Generators) of the NEC.

Overcurrent protection

The conductors used in the power supply assembly between the output terminals of the power source and the main over current protection device will not exceed 144.00" (3658 mm) in length.

For fixed power supplies, all conductors in the power supply assembly will be type THHW, THW, or use stranded conductors enclosed in nonmetallic liquid tight flexible conduit rated for a minimum of 194 degree Fahrenheit (90 degrees Celsius).

For portable power supplies, conductors located between the power source and the line side of the main overcurrent protection device will be type SO or type SEO with suffix WA flexible cord rated for 600-volts at 194 degrees Fahrenheit (90 degrees Celsius).

Wiring Methods

Fixed wiring systems will be limited to the following:

- Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius)
- or
- Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius)

Electrical cord or conduit will not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring. In addition the wiring will be run as follows.

- Separated by a minimum of 12.00" (305 mm), or properly shielded, from exhaust piping

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- Separated from fuel lines by a minimum of 6.00" (152 mm) distance

Electrical cord or conduit will be supported within 6.00" (152 mm) of any junction box and at a minimum of every 24.00" (610 mm) of continuous run. Supports will be made of nonmetallic materials or corrosion protected metal. All supports will be of a design that does not cut or abrade the conduit or cable and will be mechanically fastened to the vehicle.

Wiring Identification

All line voltage conductors located in the main panel board will be individually and permanently identified. The identification will reference the wiring schematic or indicate the final termination point. When prewiring for future power sources or devices, the unterminated ends will be labeled showing function and wire size.

Wet Locations

All wet location receptacle outlets and inlet devices, including those on hardwired remote power distribution boxes, will be of the grounding type provided with a wet location cover and installed in accordance with Section 210-7 "Receptacles and Cord Connections" of the NEC.

All receptacles located in a wet location will be not less than 24.00" (610 mm) from the ground. Receptacles on off-road vehicles will be a minimum of 30.00" (762 mm) from the ground.

The face of any wet location receptacle will be installed in a plane from vertical to not more than 45 degrees off vertical. No receptacle will be installed in a face up position.

Dry Locations

All receptacles located in a dry location will be of the grounding type. Receptacles will be not less than 30.00" (762 mm) above the interior floor height.

All receptacles will be marked with the type of line voltage (120-volts or 240-volts) and the current rating in amps. If the receptacles are direct current, or other than single phase, they will be so marked.

Listing

All receptacles and electrical inlet devices will be listed to UL 498, Standard for Safety Attachment Plugs and Receptacles, or other appropriate performance standards. Receptacles used for direct current voltages will be rated for the appropriate service.

Electrical System Testing

The wiring and associated equipment will be tested by the apparatus manufacturer or the installer of the line voltage system.

The wiring and permanently connected devices and equipment will be subjected to a dielectric voltage withstand test of 900-volts for one (1) minute. The test will be conducted between live parts and the

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neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test will be conducted after all body work has been completed.

Electrical polarity verification will be made of all permanently wired equipment and receptacles to determine that connections have been properly made.

Operational Test per Current NFPA 1901 Standard

The apparatus manufacturer will perform the following operation test and ensure that the power source and any devices that are attached to the line voltage electrical system are properly connected and in working order. The test will be witnessed and the results certified by an independent third-party certification organization.

The prime mover will be started from a cold start condition and the line voltage electrical system loaded to 100 percent of the nameplate rating.

The power source will be operated at 100 percent of its nameplate voltage for a minimum of two (2) hours unless the system meets category certification as defined in the current NFPA 1901 standard.

Where the line voltage power is derived from the vehicle's low voltage system, the minimum continuous electrical load as defined in the current NFPA 1901 standard will be applied to the low voltage electrical system during the operational test.

GENERATOR

The apparatus will be equipped with a complete AC (alternating current) electrical power system. The generator will be a Harrison Model 8.0MAS-16R/D-11011/15/1, 8,000 watt hydraulic driven unit.

The generator will be driven by a transmission power take off unit, through a hydraulic pump and motor.

The hydraulic engagement supply will be operational at any time (no interlocks).

An electric/hydraulic valve will supply hydraulic fluid to the clutch engagement unit provided on the chassis PTO drive.

Generator Instruments and Controls

To properly monitor the generator performance a digital meter panel will be furnished and mounted near the circuit breaker panel.

GENERATOR LOCATION

The generator will be permanently mounted above the torque box recessed above the D6/P6 transverse compt.

GENERATOR START

There will be a switch provided on the cab instrument panel to engage the generator.

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CIRCUIT BREAKER PANEL

The circuit breaker panel will be located high on the forward wall of compartment P6.

SPARE CIRCUIT BREAKER

The circuit breaker panel will be furnished with two (2) circuit breakers, 120 volt 15 amp, as spares.

GROUND FAULT CIRCUIT INTERRUPTER

The specified 120 volt option (2) 750 watt portable lights will be supplied with a ground fault circuit interrupter (GFCI) circuit breaker.

The total quantity will be two (2) circuit breakers.

The GFCI breakers will only be used in the branch circuits and will not be used as a "master" circuit breaker.

COVER

A cover will be fabricated from aluminum 4-way. The cover will protect the generator hoses from such things as weather and objects being thrown in the cargo area.

GENERATOR OIL DRAIN

There will be a generator hydraulic fluid drain provided to route the hydraulic fluid from the generator tank to under the body:

- One (1) valve will be installed in the tank
- One (1) valve will be installed under the body

AC POWERED TRIPOD LIGHTING

There will be two (2) Whelen, ground tripod light assemblies installed on the apparatus.

The light head(s) will be Whelen, Model PCP2AP1, 150 watt 120 volt AC light(s) with switches on the light heads.

The painted parts of this light assembly to be black.

The light(s) will be installed on white ground portable tripods, located one (1) each side on top body catwalk above D2 and P2.

The light(s) selected above will include a 20 amp, 120 volt twist lock receptacle and plug.

REMOTE LIGHT SWITCH

A remote on/off actuation switch with a green indicator light will be provided to actuate a 120/240 volt solenoid switch for each quartz light.

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The two (2) switches will be located in the cab at the driver position. The switches will control the lights above D2 and P2.

ELECTRIC CORD REEL

Furnished with the 120 volt AC electrical system will be a Akron, ERWC-10-28 cord reel. The reel will be provided with a 12-volt electric rewind switch, that is guarded to prevent accidental operation and labeled for its intended use. The switch will be protected with a fuse and installed at a height not to exceed 72 inches above the operators standing position.

The reel will be capable holding 12/3 600 volt cable or 10/3 600 volt cable.

The reel will include the following features:

- Heavy-duty construction for durability
- All stainless steel hardware
- Rolled disc edges
- Live slip ring design
- Includes the gang box attached to the commutator
- Universal frame with four motor locations
- Meets NFPA requirements for reel overage of 10%

The exterior finish of the reel(s) will be powder coated silver from the reel manufacturer.

A captive roller assembly to be provided to aid in the payout and loading of the reel. A ball stop will be provided to prevent the cord from being wound on the reel.

A label will be provided in a readily visible location adjacent to the reel. The label will indicate current rating, current type, phase, voltage and total cable length.

A total of two (2) cord reels will be provided (1) in D4 and (1) in P4. Reels are to match 24837 within the compartment mounted on ceiling rearward.

The cord reel should be configured with three (3) conductors.

REEL WARRANTY

The electric reel will come with a five (5) year warranty provided by the reel manufacturer.

CORD

Provided for electric distribution will be two (2) lengths, one (1) for each reel, of 200 feet of black 10/3 electrical cord. A Hubbell L5-20, 20 amp, 120 volt, twist lock connector body will be installed on the end of the cord.

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PORTABLE JUNCTION BOX

There will be two (2) Akron EJBX electric junction box(es) provided.

There will be a cable strain relief and a 1.00' pigtail with black plastic ribbed grip, NEMA L5-20, 20 amp, 120 volt twist lock plug and boot provided for each box.

Each box will be provided with the following:

- two (2) 15/20 amp 120 volt AC duplex straight blade receptacle with flip up covers
- two (2) 20 amp 120 volt AC twist lock single receptacles with flip up covers
- a 120 volt AC light inside the box

JUNCTION BOX HOLDER

There will be an aluminum junction box holder installed adjacent to the cord reel. A total of two (2) will be mounted at pick-up.

120 VOLT RECEPTACLE

There will be five (5), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with interior stainless steel wall plate(s), installed (1) in P2 left inside wall, (1) in P4 left inside wall, (1) in P6 right inside of wall, (1) in D1 left inside wall, (1) in D6 right inside wall. The NEMA configuration for the receptacle(s) will be 5-20R.

The receptacle(s) will be powered from the shoreline inlet.

There will be a label installed near the receptacle(s) that state the following:

- Line Voltage
- Current Rating (amps)
- Phase
- Frequency
- Power Source

FOUR (4)-SECTION 105 FOOT AERIAL LADDER

CONSTRUCTION STANDARDS

The ladder will be constructed to meet all of the requirements as described in the current NFPA 1901 standards.

The aerial device will be a true ladder type device; therefore ladders attached to booms will not be considered.

These capabilities will be established in an unsupported configuration.

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All structural load supporting elements of the aerial device that are made of a ductile material will have a design stress of not more than 50% of the minimum yield strength of the material based on the combination of the live load and the dead load. This 2:1 structural safety factor meets the current NFPA 1901 standard.

All structural load supporting elements of the aerial device that are made of non-ductile material will have a design stress of not more than 20% of the minimum ultimate strength of the material, based on the combination of the rated capacity and the dead load. This 5:1 safety factor meets the current NFPA 1901 standard.

Wire ropes and attaching systems used to extend and retract the fly sections will have a 5:1 safety factor based on the ultimate strength under all operating conditions. The factor of safety for the wire rope will remain above 2:1 during any extension or retraction stall. The minimum ratio of the diameter of wire rope used to the diameter of the sheave used will be 1:12. Wire ropes will be constructed of seven (7) strands over an inner wire core for increased flexibility. The wire rope will be galvanized to reduce corrosion.

The aerial base pivot bearings will be maintenance free type bearings and require no external lubrication.

The aerial device will be capable of sustaining a static load one and one-half times its rated tip load capacity (live load) in every position in which the aerial device can be placed when the vehicle is on a firm level surface.

The aerial device will be capable of sustaining a static load one and one-third times its rated tip load capacity (live load) in every position the aerial device can be placed when the vehicle is on a slope of five degrees downward in the direction most likely to cause overturning.

With the aerial device out of the cradle in the in the fully extended position at zero degrees elevation, a test load will be applied in a horizontal direction normal to the centerline of the ladder. The turntable will not rotate and the ladder will not deflect beyond what the product specification allows.

All welding of aerial components, including the aerial ladder sections, turntable, pedestal, and outriggers, will be in compliance with the American Welding Society standards. All welding personnel will be certified, as qualified under AWS welding codes.

The aerial device will be capable of operating with the maximum rated tip load in either of the two (2) following conditions:

- Conditions of high wind up to 50 mph
- Conditions of icing, up to a coating of .25" over the entire aerial structure

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All of the design criteria must be supported by the following test data:

- Strain gage testing of the complete aerial device
- Analysis of deflection data taken while the aerial device was under test load

The following standards for materials are to be used in the design of the aerial device:

- Materials are to be certified by the mill that manufactured the material
- Material testing that is performed after the mill test will be for verification only and not with the intent of changing the classification
- All welded structural components for the ladder will be traceable to their mill lots.

LADDER CONSTRUCTION

The ladder will be comprised of four sections.

The ladder will have the capability to support a minimum of 500 pounds at the tip in the unsupported configuration, based upon 360 degree rotation, up to full extension and from -8 degrees to +75 degrees.

The ladder (handrails, baserails, trusses, K-braces and rungs) will be constructed of high strength low alloy steel, minimum 70,000 pounds per square inch yield, with full traceability on all structural members.

Each section will be trussed diagonally, vertically and horizontally using welded steel tubing.

All ladder rungs will be round and welded to each section utilizing "K" bracing for torsional rigidity.

The inside width dimensions of the ladder will be:

- Base Section 39.00"
- Inner-Mid Section 32.25"
- Outer-Mid Section 26.62"
- Fly Section 21.62"

The height of the handrails above the centerline of the rungs will be:

- Base Section 26.75"
- Inner-Mid Section 22.87"
- Outer-Mid Section 20.25"
- Fly Section 17.50"

The ladder will be designed to provide continuous egress for firefighters and civilians from an elevated position to the ground. The end of the fly section will be constructed in a manner that aids personnel who are climbing off the ladder.

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The egress section will be designed to maintain the rated load of the aerial device. It will be bolted on for easy replacement.

VERTICAL HEIGHT

The ladder will extend to a minimum height of 105' above the ground at full extension and elevation. The measurement of height will be consistent with NFPA standards.

HORIZONTAL REACH

The rated horizontal reach will be a minimum of 100'. The measurement of horizontal reach will be consistent with NFPA standards.

TURNTABLE

The upper turntable assembly will connect the aerial ladder to the turntable bearing. The steel structure will have a mounting position for the aerial elevation cylinders, ladder connecting pins, and upper turntable operator's position.

The turntable will be a 1.00" thick steel deck, coated with a non-skid, chemical resistant material in the walking areas. The stepping surfaces will meet the skid-resistance requirements of the current NFPA 1901 standard.

The turntable platform will be approximately 95.00" wide x 84.50" long.

The turntable handrails will be a minimum 42.00" high and will not increase the overall travel height of the vehicle. The handrails will be constructed from aluminum and have a slip resistant knurled surface.

ELEVATION SYSTEM

Two (2) double acting lift cylinders will be utilized to provide smooth precise elevation from 8 degrees below horizontal to 75 degrees above horizontal.

The lift cylinders will have a 6.00" internal diameter (bore), .50" wall thickness, 4.50" diameter cylinder rod and a 34.84" stroke.

The lift cylinders will be equipped with integral holding valves located on the cylinder to prevent the unit from falling should the charged lines be severed at any point within the hydraulic system.

The lift cylinders will be mounted utilizing maintenance free spherical bearings on both ends of the cylinders. The bearings will help reduce pin wear.

Ladder tip speed is automatically decelerated when the angle is above 60 degrees, reducing "tip-lash".

The pivot pins will be stainless steel with greaseless bushings and will be 2.25" in diameter. All elevation pins will be stainless steel with greaseless ladder pivot pins.

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EXTENSION/RETRACTION SYSTEM

A full hydraulic powered extension and retraction system will be provided using two (2) hydraulic cylinders and wire ropes.

Each cylinder is capable of operating the ladder in the event of a failure to the other.

The extension cylinder will have a 3.00" internal diameter (bore), 1.75" diameter rod and a 134.00" stroke.

Extension and retraction will be internally limited within the cylinders, eliminating excess strain on wire ropes, sheaves and the ladder structure.

Each of the cylinders, wire ropes and sheave assemblies will be completely independent of the other, so as to provide a safety factor wherein a failure of one assembly will not affect the function and operation of the other.

The extension cylinders will be equipped with integral holding valves to prevent the unit from retracting should the charged lines be severed at any point within the hydraulic system.

The extension cylinders will be mounted utilizing maintenance free spherical bearings.

The cylinders will also have internal deceleration valves to cushion the movement of the cylinder when approaching full extension or retraction.

The reeling of the wire rope will be such as to provide synchronized, simultaneous movement of all sections to full extension.

The extension/retraction wire ropes will be: 7-flex galvanized wire rope with stainless steel threaded ends and will have the following characteristics:

- Lower mid Section .50" diameter with 26,200lb nominal design strength
- Mid Section.38" diameter with 14,880lb nominal design strength
- Fly Section.31" diameter with 10,380lb nominal design strength

Wear pads that are made of polymer material will be used between the telescoping sections for maximum weight distribution, strength and smoothness of operation.

Adjustment screws will be provided on the wear pads to permit proper side alignment.

All sheaves will be plastic and greaseless and all sheave pins and pivot pins will be polished stainless steel.

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ROTATION SYSTEM

A 46.00" diameter, external tooth, monorace, slewing ring bearing will be used for the rotation system. The gear teeth will be stub tooth form.

The bearing will provide 360 degree continuous rotation.

The turntable will be bolted to the bearing using 36 SAE Grade 8, .875" diameter bolts.

To secure the bearing to the torque box, 36 Grade 8, .875" diameter bolts will be used.

The turntable base and the torque box bearing plate will be machined flat, within .007" thereby providing even distribution of forces.

Two hydraulically driven planetary gear boxes will be used to provide infinite and minute rotation control throughout the entire rotational travel.

Each planetary gearbox will have a torque rating of 130,000 pounds per inch.

Each planetary gearbox will have a spring applied, hydraulically released disc type swing brake to provide positive braking of the turntable assembly.

ROTATION INTERLOCK

A permanently installed prevention mechanism will be provided as part of the rotation system to prevent the rotation of the aerial device to the side in which the stabilizers have not been fully deployed or are short-jacked.

The mechanism will allow full and unrestricted use of the aerial in the 180 degree area on the side(s) where the stabilizers have been fully deployed.

The system will also have a manual override to comply with NFPA 1901.

TORQUE BOX

A "torsion box" subframe will be installed between the two (2) sets of stabilizers.

The torque box will be constructed of .312" thick (minimum) steel plate (50,000 pounds per square inch yield) with steel tubing reinforcement on each side of the box in the turntable area.

The torque box subframe assembly is capable of withstanding all torsional and horizontal loads when the unit is on the stabilizers.

The torque box will be bolted to the chassis frame rails using 20 SAE Grade 8, .750" bolts with nuts.

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LOAD CAPACITIES

The following load capacities will be established, with the stabilizers at full horizontal extension and placed in the down position, to level the truck and to relieve the weight from the tires and axles.

Capacities will be based upon full extension and 360 degree rotation.

A load chart, visible at the operator's station, will be provided. The load chart will show the recommended safe load at any condition of the aerial device's elevation and extension.

50 MPH WIND CONDITIONS/WATERWAY DRY

Degrees of Elevation	-8 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 75
Egress	500	500	500	500	500	500	500	500
Fly	-	-	-	-	250	250	750	1000
Upper Mid	-	-	-	250	250	500	1000	1000
Lower Mid	-	-	250	250	500	750	1000	1000
Base	-	250	500	500	750	1000	1000	1000

50 MPH WIND CONDITIONS/WATERWAY CHARGED

Degrees of Elevation	-8 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 75
Egress	500	500	500	500	500	500	500	500
Fly	-	-	-	-	-	250	500	750
Upper Mid	-	-	-	-	250	500	750	1000
Lower Mid	-	-	-	250	500	750	1000	1000
Base	-	-	250	500	750	1000	1000	1000

Reduced loads at the tip can be redistributed in 250 lb. increments to the fly, mid, or base sections as needed.

The tip capacity will be reduced to zero when flowing water with the nozzle above the waterway centerline.

BOOM SUPPORT

A heavy duty boom support will be provided for support of the ladder in the travel position. On the base section of the ladder, a stainless steel scuffplate will be provided where the ladder comes into contact with the boom support.

MODIFICATION, TORQUE BOX

The torque box will be modified to accommodate the raised rear substructure.

AERIAL BOOM SUPPORT LIGHT

There will be one (1) Amdor, Model Luma Bar H2O, white LED strip light mounted on the boom support cradle. This light will be activated when the aerial master switch is activated.

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The boom support will be located just to the rear of the chassis cab, recessed into the transverse compartment in place of pump.

MODIFIED TORQUE BOX

The torque box will be modified to accommodate special location for the hydraulic tank. There will be a special bottom plate on the torque box to accommodate the hydraulic tank location.

AERIAL BOOM PANEL

There will be one boom panel provided on each side of the aerial ladder base section. The boom panel will be painted Red #644. Customer requests that NO bolts show on the exterior of the panel per job 29770.

The boom panels will be designed so no mounting bolts are in the face of the panel. This will keep the lettering surface free of holes.

EXTENSION INDICATOR

Extension markings and corresponding numerical indicators will be provided along each inside and outside top rail of the base section of the aerial every 10'. They will indicate various positions of extension up to full. Markings and indicators will be clearly visible to the console operator. To aid in visibility during hours of darkness, the markings and numerical indicators will be red reflective material.

FOLDING STEPS

One (1) set of folding steps will be provided at the tip of the ladder. An additional set of folding steps will be provided at the base of the fly section. The steps will be bright finished, non-skid with a luminescent coating that is rechargeable from any light source and can hold a charge for up to 24 hours. Each step will incorporate an LED light to illuminate the stepping surface.

AERIAL DEVICE RUNG COVERS

Each rung will be covered with a secure, heavy-duty, fiberglass pultrusion that incorporates an aggressive, no-slip coating.

The rung covers will be glued to each rung, and will be easily replaceable should the rung cover become damaged.

The center portion of each rung cover will be black and the outside 2.00" edge at each side will be safety yellow.

Under no circumstances will the rung covers be fastened to the rungs using screws or rivets.

The rung covers will have a 10-year, limited warranty.

RUBBISH HOOK MOUNTING BRACKET

Mounting will be provided near the end of the fly section of the aerial ladder for a rubbish hook.

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The bracket will be sized to hold a Nupla 8' roof vent rubbish hook with D handle.

LIMITED RETRACTION

The aerial device will have limited retraction.

TEMPORARY SCABBARD AT END OF AERIAL

There will be a total of two (2) vent saw scabbard(s) provided. The scabbard(s) will be mounted on each side of the aerial egress. The scabbard(s) will be DA finished.

PIKE POLE MOUNTING BRACKETS

Mounting will be provided near the end of the fly section of the aerial ladder for one (1) pike pole(s).

The bracket will be sized to hold a Fire Hooks Unlimited 10' pike pole.

LADDER STORAGE MOUNTING BRACKETS

There will be D/A finished brackets provided near the end of the fly section of the aerial for mounting a roof ladder.

The mounting brackets will accommodate a 14' Duo-Safety 775-DR, 16.00" wide roof ladder as determined by the type of aerial device and the available space.

LIGHTS FOR TURNTABLE WALKWAY

There will be white LED lights provided at the aerial turntable. The lights will be located to illuminate the entire walking surface of the turntable including the area around the turntable console. These lights will be activated by the aerial master switch.

TURNTABLE CONSOLE LIGHTING

There will be one (1), TecNiq Model T10, white LED light strip mounted in the turntable console cover to illuminate the controls located on both the upper and lower portion of the turntable control station. These lights will be activated by the aerial master switch.

EYELETS FOR ROPE TIE OFF POINTS

Two (2) hoist ring forged eyelets will be mounted on the cross tube near the front edge of the turntable, one on driver side and one on passenger side to be used as a rope tie off point. The rope tie off point is for use on the side of the turntable only, not up the aerial device.

The rating on each eyelet will have a maximum of 1000 lb.

ROTATION BEARING COVER

An aluminum treadplate cover will be fitted over the aerial rotation bearing and drive pinion gear(s). The cover will be attached to the underside of the turntable deck.

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CONTROL STATION COVER

The cover provided at the turntable control station will be made taller than standard to allow the intercom controls, speaker and 120 volt tip light switch to be installed under the cover.

EYELETS FOR ROPE TIE OFF POINTS

Two (2) eyelets will be mounted near the edge at the rear edge of the turntable to be used in as a rope tie off point. Eyelets will be provided that are approximately 10.00" off the center on each side. They will be spaced as not to interfere with handrail mounting.

The rating on each of these eyelets will be no more than 1000 lbs.

TURNTABLE CONTROL STATION

There will be a turntable control station located on the left hand side of the turntable so the operator will be able to easily observe the ladder tip while operating the controls. The controls will permit the operator to regulate the speed of the aerial functions within safe limits (as determined by the manufacturer and NFPA standards). The controls will be clearly marked and lighted for nighttime operation. A hinged aluminum cover will be provided. The momentary foot switch located at the turntable control station will activate the aerial function controls. They are capable of being operated independently or simultaneously.

The following controls and indicator lights will be clearly identified, illuminated, and conveniently located for ease of operation and viewing:

- Elevation, extension/retraction, and rotation controls
- High idle switch
- Rung alignment indicator light
- Tip/Tracking lights switch
- Hydraulic system pressure gauge
- Indicator/Alarm test switch
- EPU switch and light
- Operator's load chart
- Stabilizer Not Fully Extended indicator light
- Monitor controls
- Aerial waterway flow meter

STABILIZER CONTROL STATION

There will be two (2) easily accessible control stations, one (1) for driver side stabilizers and one (1) for passenger side stabilizers, located at the rear of the apparatus.

The following controls and indicator lights will be clearly identified, illuminated, and conveniently located for ease of operation and viewing at each of the control stations except where otherwise noted:

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- Left Rear Stabilizer Firm On Ground indicator light (driver side panel only)
- Left Rear Stabilizer Fully Extended Indicator light (driver side panel only)
- Left Rear Stabilizer In/Out switch (driver side panel only)
- Left Rear Stabilizer Up/Down switch (driver side panel only)
- Left Front Stabilizer Firm On Ground indicator light (driver side panel only)
- Left Front Stabilizer Fully Extended indicator light (driver side panel only)
- Left Front Stabilizer In/Out switch (driver side panel only)
- Left Front Stabilizer Up/Down switch (driver side panel only)
- Right Rear Stabilizer Firm On Ground indicator light (passenger side panel only)
- Right Rear Stabilizer Fully Extended indicator light (passenger side panel only)
- Right Rear Stabilizer In/Out switch (passenger side panel only)
- Right Rear Stabilizer Up/Down switch (passenger side panel only)
- Right Front Stabilizer Firm On Ground indicator light (passenger side panel only)
- Right Front Stabilizer Fully Extended indicator light (passenger side panel only)
- Right Front Stabilizer In/Out switch (passenger side panel only)
- Right Front Stabilizer Up/Down switch (passenger side panel only)
- Hydraulic emergency power switch
- High idle switch

STABILIZERS

The vehicle will come equipped with a stabilization system consisting of four (4) hydraulically operated out and down style stabilizers. This system will meet or exceed all requirements of the NFPA specifications related to stabilization and setup on sloped surfaces.

The stabilizer/leveling jacks will have a maximum spread of 14' measured from the centerline of the jack footpads when the beams are fully extended. The beams will be 6.88" wide x 9.00" high with 3/4" thick top and bottom plates and 1/2" thick sides of 100,000-PSI minimum yield strength steel. The cylinders will have pilot-operated check valves with thermal relief designed to insure that the beams will not drift out of the stowed position during travel. Wear pads will guide the stabilizers.

The horizontal extension cylinders will be totally enclosed within the beams and will incorporate telescoping hydraulic tubing to supply the jack cylinder hydraulic power. Stabilizer hydraulic hoses will remain stationary during operation of the stabilizers to prevent hose wear and potential failure. The cylinders will be equipped with decelerators to reduce the speed of extension and retraction when the beams are near the fully retracted and extended positions. The stabilizer extension hydraulic cylinders will have the following dimensions: 2.25" bore, 1.38" rod, and 39.25" stroke.

The vertical jack cylinders will be capable of 18.00" ground penetration. The cylinders will be supplied with pilot operated check valves on each jack cylinder to hold the cylinder in the stowed or working

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position, should a charged line be severed at any point in the hydraulic system. For safety, the integral holding valves will be located in the cylinder base end, NOT in the transfer tube. Vertical jack cylinder rods will be fully enclosed by a telescoping inner box to protect the cylinder rods from damage. The stabilizer jack hydraulic cylinders will have the following dimensions: 4.25" bore, 3.00" rod, and 34.88" stroke.

Each stabilizer jack will have a polished stainless steel shield. The stainless steel shield will be a maximum of 14.00" wide so as to allow the extension of the stabilizer between parked cars or other obstacles. This plate will serve as a protective guard and a mounting surface for warning lights. The top, forward, and rear edges will be flanged back 90 degrees for added strength.

STABILIZER PADS

The stabilizer footpad will be 12.00" in diameter. The footpad will be attached to the jack cylinder rod by means of a machined ball at the end of the jack cylinder rod which mates to a socket machined into the footpad. The footpad will have the ability to pivot 20 degrees from horizontal in any direction to allow setup on uneven terrain.

AUXILIARY STABILIZER PADS

An auxiliary ground pad will be supplied for each stabilizer to provide additional load distribution on soft surfaces. The pads will be 31" x 26" and made from a lightweight composite material. The ground pressure will not exceed 75 pounds per square inch when the ground pads are used and the apparatus is fully loaded and the aerial device is carrying its rated capacity in any position. The pads will be stored in a double stacked configuration, two (2) behind each rear tandem axle in a single bracket.

STABILIZER CONTROLS

An electrically controlled hydraulic valve will power stabilizer movement. The valve can also be manually controlled in the event of electrical malfunction. Hydraulic power override controls will be incorporated into the valve. The manual override mechanism will be completely sealed within the valve assembly to prevent any possibility of corrosion.

The stabilizer controls will be located to provide the operator with a full view of each stabilizer being positioned. Each stabilizer control panel will include the following:

- In/out stabilizer beam control toggle switch
- Up/down stabilizer jack control toggle switch
- Emergency hydraulic power unit (EPU) control toggle switch
- High idle control toggle switch
- Stabilizer fully extended LED indicator lights
- Stabilizer planted LED indicator lights

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As a safety device, an electrically actuated diverter valve will be provided. The hydraulic power will be diverted to the aerial ladder controls automatically the instant all stabilizer jacks are firmly planted on the ground. Once the aerial ladder is raised from the bedded position, the stabilizer hydraulic power is cut off so the stabilizers will not accidentally be moved while the aerial is being operated.

To aid in leveling the unit, two bubble type angle indicators will be located near the stabilizer controls. One indicator will show the angle of the truck from the front to rear and the other will show the side to side angle of the truck. The indicators will be color coded green to show when the truck has been properly leveled allowing the aerial device to be operated at full capacity.

A stabilizer deployment audible warning alarm will be provided at each side of the body, activated by the stabilizer movement.

A "Stabilizers Not Stowed" indicator light will be provided in the cab within view of the driver. It will illuminate automatically whenever the stabilizers are not fully stowed to prevent damage to the vehicle if it is moved. The stabilizer system will also be wired to the "Do Not Move Truck" indicator light. This light will flash whenever the apparatus parking brake is not engaged and the stabilizers are not fully stowed.

STABILIZER PINS

The stabilizer jacks will not have holes for the stabilizer pins.

STABILIZER CONTROL BOX SMOOTH ALUMINUM DOOR

Vertically hinged smooth aluminum doors will be provided over each stabilizer control box. The doors will be hinged inboard.

STABILIZER PLACEMENT

There will be four (4) lasers provided and installed on the body, one (1) next to each stabilizer. The lasers will be activated with the aerial master switch and park brake set and will provide a flashing green X on the ground to show where the outrigger pads need to be set. Laser may not be visible in direct sunlight. The individual lasers will be turned off when a stabilizer is extended beyond its stowed position as well as when the parking brake is released or the aerial master is turned off.

STABILIZER PADS, MODIFIED LOCATION

The auxiliary stabilizer pads will be relocated to one (1) under D1, one (1) under D4, one (1) under P1 and one (1) under P6.

HYDRAULIC SYSTEM

All hose assemblies will be assembled and crimped by the hose manufactures certified technician. An assembly cell will be located on the premises where the technician can perform audits of the final aerial assembly for proper fitting torque and hose routing.

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All manufacturing employees responsible for the installation of hydraulic components will be properly trained. Training will include: proper handling, installation, torque requirements, cleanliness and quality control procedures for hydraulic components.

Hoses used in the aerial hydraulic system will be of a premium quality hose with a high abrasion resistant cover. All pressure hoses will have a working pressure of 4000 psi. and a burst pressure rating of 16,000 psi.

The hydraulic oil will be a premium Multi-Vis product that will have a leading edge additive package, provide oxidation stability, be extremely shear stable, and have maximum anti-wear properties. All oil delivered to the manufacturing site will have a minimum ISO cleanliness level of 18/15/13.

Each aerial will be evaluated as to the region and climate where it will be used to determine the optimum viscosity and proper oil grade. Oil viscosity will be based on an optimum range of 80 to 1000 SUS during normal aerial use. Before shipment of the unit, an oil sample will be taken and analyzed to confirm the oil is within the allowable ISO grade tolerance.

The aerial hydraulic system will have a minimum oil cleanliness level of ISO 18/15/13 based on the ISO 4406:1999 cleanliness standard. Each customer will receive a certificate of actual cleanliness test results and an explanation of the rating system.

Each aerial will include an oil sample port, identified with a yellow dust cap and a label, for subsequent customer testing.

Ball valves will be provided in the hydraulic suction and return lines to permit component servicing without draining the oil reservoir.

The system hydraulic pressure will be displayed on a 2.5" liquid filled gauge, located on the control console.

The hydraulic system will be additionally protected from excessive pressure by a secondary pressure relief valve set at 3150 psi. In the event the main hydraulic pump compensator malfunctions, the secondary relief will prevent system damage.

HYDRAULIC CYLINDERS

All cylinders used on the aerial device will be produced by a manufacturer that specializes in the manufacture of hydraulic cylinders.

Each cylinder will include integral safety holding cartridges.

Each cylinder will be designed to a minimum safety factor of 4:1 to failure.

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All safety holding cartridges will be installed at the cylinder manufacturer, in a controlled clean environment to avoid possible contamination and or failure.

HYDRAULIC PUMP

The hydraulic system will be supplied by a variable displacement, load and pressure compensating piston pump. The pump will meet the demands of all three (3) simultaneous aerial functions. The pump will provide proper flow for a single aerial function with the engine at idle speed. A switch will be provided on the control console to increase the engine speed for multiple function operation.

EMERGENCY PUMP

The aerial will be equipped with an emergency hydraulic pump, electrically driven from the truck batteries. The pump will be capable of running for 30 minutes for limited aerial functions to stow the unit in case of a main pump or truck system failure. A momentary switch will be located at the stabilizer and aerial control locations to activate the emergency pump.

AERIAL CONTROL VALVE

The aerial hydraulic control valve will be designed with special spool flows, limiting the oil flow for the designed function speed. The valve will be manually controlled and be located in the control console with the handles protruding through the operating surface for operation. The activation handles will be spaced a minimum of 3.5" for ease of operation.

OIL RESERVOIR

The oil reservoir will have a minimum capacity of 38 gallons. The oil fill location will be easily accessible and be labeled "Hydraulic Oil Only" and also indicate the grade of oil that is installed in the reservoir. The fill will have a desiccant breather filter with a water capacity of 4 fluid ounces and a 5 micron rating. A drain hose will be included and will terminate with a quarter turn ball valve. Two (2) suction ports will be provided, one (1) for the main hydraulic pump and one (1) for the emergency pump. The main suction will be slightly elevated off the bottom of the reservoir and include a 100 mesh suction strainer. The emergency suction port will be closer to the bottom of the reservoir to provide some reserve oil for emergency operation. A six (6) disc type magnetic drain will also be provided to collect any ferrous contaminants. A float type sending unit in the reservoir will provide an indication of oil level on an electric gauge mounted adjacent to the fill location.

HIGH PRESSURE FILTER

The pressure filter will be rated for 6,000 psi working pressure and generously sized for efficiency and capacity. A 90 psi bypass spring will be included to protect the element and hydraulic system during lower than normal system operating temperatures.

The 5Q filter element will be constructed of a micro glass medium, which has the highest capture efficiency, dirt holding capacity and life expectancy over other media such as cellulose and synthetic.

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The nominal rating will be 5 micron and have an efficiency rating of 99.3 % for 5 micron sized particles. The element will have a dirt holding capacity of not less than 35 grams.

RETURN FILTER

The return filter will be rated for 800 psi working pressure and generously sized for efficiency and capacity. A 25 psi bypass spring will be included to protect the element and hydraulic system during lower than normal system operating temperatures. The 5Q filter element will be constructed of a micro glass medium, which has the highest capture efficiency, dirt holding capacity and life expectancy over other media such as cellulose and synthetic. The nominal rating will be 5 microns and have an efficiency rating of 99.6% for 5 micron sized particles. The element will have a dirt holding capacity of not less than 40 grams.

HYDRAULIC SWIVEL

The aerial ladder will be equipped with a high pressure hydraulic swivel which will connect the hydraulic lines from the hydraulic pump and reservoir, through the rotation point, to the aerial control bank. The hydraulic swivel will allow for 360-degree continuous rotation of the aerial.

ELECTRIC SWIVEL

The ladder will be equipped with an electric swivel to allow 360-degree rotation of the aerial while maintaining connections in all electrical circuits through the rotation point. A minimum of 32 collector rings that are capable of supplying 30-amp continuous service will be provided. All collector rings will be enclosed and protected against condensation and corrosion.

ELECTRICAL SYSTEM

The aerial electrical system will be designed and manufactured in such a way that the power and signal protection and control compartments will contain circuit protection devices and power control devices. The power and signal protection and control components will be protected against corrosion, excessive heat, excessive vibration, physical damage, and water spray.

The aerial electrical system will be designed and manufactured to allow the following:

- All of the serviceable components will be readily accessible.
- Circuit protection devices will be utilized to protect each circuit.
- All circuit protection devices will be sized to prevent wire and component damage when subjected to extreme current overload.
- General protection circuit breakers will be Type-I automatic reset (continuously resetting) or Type-II (manual resetting) and conform to SAE requirements. When required, automotive type fuses conforming to SAE requirements will be utilized to protect electronic equipment.
- Power control relays and solenoids, when utilized, will have a direct current (dc) rating of 125% of the maximum current for which the circuit is protected.

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The aerial electrical system will be designed and manufactured to allow the following:

- Toggle switches will be utilized that are certified for the outside conditions that fire apparatus experience.
- All wiring will be protected through conduit or loom.
- All wiring harnesses will be properly supported to eliminate harness damage through rubbing.
- An inductive proximity switch and illumination light will be incorporated into the boom support.
- The aerial master and aerial PTO can be engaged after the water pump has been engaged without having to bring the RPM back to idle.
- Standard cabling to the tip of the aerial will consist of one (1) 16/20 cable and one (1) 12/8 cable.

DRIVER SIDE TORQUE BOX POWER DISTRIBUTION PANEL

A fuse and relay panel, located behind the driver side stabilizer, will include the following:

- NEMA 4x rated weatherproof enclosure
- Relays, fuses, and circuit breakers for aerial and stabilizer interlocks and control switches

TURNTABLE LIGHTING

The turntable will be lighted for nighttime operation with a minimum of two (2) work lights activated by the aerial master switch. A foot switch will be located at the turntable console to allow hydraulic flow to the aerial device. The foot switch will be protected by a cover to prevent accidental activation.

Activation of the foot switch is necessary for aerial device operation.

TURNTABLE CONSOLE

The following switches and indicator lights will be standard on the turntable console:

- High idle on/off switch
- Tip/Tracking light switch
- Indicator and alarm test switch
- Emergency hydraulic power switch
- STABILIZERS NOT FULLY EXTENDED amber indicator light
- Rung alignment green indicator light

The turntable console will be lighted for nighttime operation with one (1) work light activated by the aerial master switch. A fuse panel will be located in the turntable console.

TURNTABLE OVERRIDE CONTROLS

The aerial manual override controls will be located in the turntable control console.

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MASTER OVERRIDE CONTROLS

An emergency power switch will be located at the rear of the apparatus. The switch will activate the emergency power unit and allow control of the aerial or stabilizers based on the direction the switch is toggled.

A work light will be provided to illuminate the master override controls when the battery switch is active and the master override door is open.

BOOM SUPPORT

A Turck inductive proximity switch will be provided on the boom support to detect if the aerial device is fully stowed within the boom support.

STABILIZER INDICATOR

A "Stabilizers Not Stowed" indicator will be provided in the driver's compartment. It will illuminate automatically whenever the stabilizers are not fully stowed, to prevent damage to the apparatus if moved. The stabilizer system will also be wired to the "Do Not Move" indicator light, which will flash whenever the apparatus parking brake is not fully engaged and the stabilizers are not fully stowed.

CRADLE INTERLOCK SYSTEM

A cradle interlock system will be provided to prevent the lifting of the aerial from the nested position until the operator has positioned all the stabilizers in a load supporting configuration. A switch will be installed at the cradle to prevent operation of the stabilizers once the aerial has been elevated from the nested position.

STABILIZER ALARM

An electronic warning device will be provided at each stabilizer to warn personnel that the stabilizers are being deployed. Each alarm will produce a fast pulsing 90 DBA signal and will cancel only when the stabilizer is put into a load bearing configuration.

STABILIZER SCENE LIGHTS

A 4.00" clear floodlight will be provided on each stabilizer to illuminate the surrounding area. The light will be actuated by the aerial master switch.

SPOTLIGHTS

There will be six (6) Whelen® Micro Pioneer, Model MPB*, 12 volt DC LED bail mount lights furnished.

- One (1) will be mounted on the driver's side of the base section of the ladder
- One (1) will be mounted on the passenger's side of the base section of the ladder
- One (1) will be mounted high on the driver's side tip of aerial
- One (1) will be mounted high on the passenger's side tip of aerial

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- One (1) will be mounted low on the driver's side tip of the aerial
- One (1) will be mounted low on the passenger's side tip of the aerial

The painted parts of this light assembly to be black.

Power to the "tracking lights" will be controlled by an on/off switch at the turntable control operator's position.

The lights at the tip will be controlled by platform/tip and turntable.

LIGHTING ON AERIAL LADDER

There will be TecNiq, Model D02 LED rung lighting provided on both sides of the aerial ladder base, lower and upper mid, and fly sections. The lighting will be located adjacent to the ladder rungs along the lower rail of the ladder sections and will run the length of the ladder section.

The color of the sections will be:

- The base section of the ladder to be blue.
- The lower mid section of the ladder to be blue.
- The upper mid section of the ladder to be blue.
- The fly section of the ladder to be blue.

The LED rung lighting will be activated when a switch at the turntable operator's panel is activated through the master battery switch.

The lights may be load managed when the parking brake is applied.

AERIAL LOCATOR LIGHT

There will be two (2) Whelen Model VTX609*, 1.00" high x 2.25" in diameter LED modules with chrome flanges installed at the aerial tip for the purpose of locating the aerial device while in operation.

Both modules will be activated whenever the aerial is raised from the cradle.

The color of the locator light will be clear.

The lens color will be clear.

STABILIZER WARNING LIGHTS

There will be two (2) Whelen®, Model M6*, LED flashing warning lights with chrome flanges installed, one (1) on each front stabilizer cover panel.

- The front stabilizer pan lights will include red flashing LEDs.

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There will be two (2) Whelen, Model M6V2*, 4.31" high x 6.75" long x 2.25" deep lights with flashing LEDs, scene LEDs and chrome flanges installed, one (1) on each rear stabilizer cover panel.

- The rear stabilizer pan lights will include red flashing LEDs.

The lenses over the flashing LEDs will be the same color as the LED's. The lenses over the scene LEDs will be clear.

The warning LEDs will be activated by the same switch as the side warning lights.

The scene LEDs will be activated with the stabilizer beam flashing lights.

STABILIZER BEAM WARNING LIGHTS

Two (2) 4.00" diameter red LED flashing lights will be mounted on each stabilizer, one (1) facing forward and one (1) facing rearward. The lights will be Grote Supernova 40 series LED lights. The lights will be recessed in the horizontal beam of the stabilizer. These warning lights will be activated with the aerial master switch.

STABILIZER SCENE LIGHTS

There will be one (1) Amdor Luma Bar H2O, Model AY-9500-012 LED strip light installed under each stabilizer beam to illuminate the surrounding area. A total of four (4) lights will be installed. The lights will be activated by the aerial master switch.

2-WAY AERIAL COMMUNICATION SYSTEM

There will be a Fire Research, Model ICA900-112, two-way intercom system provided. The control module with LED volume display and push-button volume control and speaker will be located in the turntable operator console, provided there is room.

A hands free module will be located at the aerial tip or platform and constantly transmit to the other module unless the control module push-to-talk button is pressed.

Each intercom unit will be weatherproof.

RESCUE LIFTING SYSTEM

A rescue lifting attachment will be provided. The lifting attachment will mount to the aerial egress and will consist of a pair of nylatron pulleys mounted to a stainless steel shaft. The pulleys will be adjustable from side to side and will have a total lifting capacity of 500lb, regardless of whether one (1) or both pulleys are being utilized.

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ROPE GUIDE BAR AT BASE SECTION, RESCUE LIFTING SYSTEM

A removable bracket will be supplied at the rear of the base section, attached between the left hand and right hand rear hand rails. The bracket will be designed to be easily removable and not interfere with a fully retracted ladder assembly when attached to the base section. A storage box for the bracket will be provided on the outside rear of the base section, on the same side as the turntable control console.

LIFTING EYE ASSEMBLY - ROPE RESCUE ATTACHMENT

A lifting eye assembly will be provided that is designed to evenly distribute load at the tip of the aerial. The egress will include attachment points for the lifting eye assembly. The lift eye assembly is retained by two (2) locking pins, one (1) at each end outboard side of the egress. Leveling is maintained by the lifting eye assembly rotating within the egress mounting.

AIR HORN CONTROL AT AERIAL TURNTABLE

An air horn control button will be provided at the aerial turntable. This button will be red in color and properly labeled. Collector ring space must be available for this option to be utilized.

AERIAL STABILITY GAUGE

There will be a Class 1 Load Minder located in the turntable control station. The gauge and warning alarm will be clearly identified and conveniently located for ease of viewing.

There will be ECCO Model 6200 amber strobe lights provided at each side of the tip of the base section of the aerial device.

HITCH, WINCH MOUNT

A hitch receiver will be supplied at the driver and passenger side of the vehicle aft of the rear wheels. The hitch will not interfere with the angle of departure and will be tied directly to the frame rails. The hitch will be capable of up to a 6,000 lb direct pull. Receiver plugs will be provided for the receiver when it is not in use.

AERIAL TURNTABLE MANSAVER™ BARS

ManSaver™ bars will be installed at the aerial turntable.

WATER SYSTEM

A waterway system will be provided consisting of the following components and features:

A 5.00" pipe connected to the water supply on one end and to a water swivel at the rotation point of the turntable. The water swivel will allow the ladder to rotate 360 degrees continuously while flowing water.

A 4.00" waterway swivel is to be routed through the rotation point swivel up to the heel pin swivel. The heel pin swivel will allow the water to flow to the ladder pipe while elevating the aerial ladder from -5 degrees to 75 degrees. The heel pivot pin is not integral with the waterway swivel at any point. The

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design of the waterway will allow complete servicing of the waterway swivel without disturbing the heel pivot pin.

The integral telescopic water system will consist of a 4.50" diameter tube in the base section, a 4.00" diameter tube in the inner mid-section, 3.50" diameter tube in the outer mid-section and a 3.00" diameter tube in the fly section. The telescopic water pipes will be anodized aluminum.

The rotational torque will have adequate power to rotate the ladder into a full 1000 gallon per minute water stream directed at 90 degrees to the side while maintaining the 500 pound tip load.

The aerial will be capable of discharging up to 1000 gallons per minute at 100 pounds per square inch parallel to the ladder and 90 degrees to each side of center while maintaining the fully rated tip load.

An adjustable intake relief valve will be furnished to protect the aerial waterway from a pressure surge.

A 1.50" drain valve will be located at the lowest point of the waterway system.

WATERWAY SEALS

The waterway seals will be of type-B PolyPak design, composed of nitroxile seal and a nitrile wiper, which together offer maximum stability and extrusion resistance on the waterway. The seal will be capable of withstanding pressures up to 2000 psi, temperatures in excess of 250 degrees Fahrenheit and have resistance to all foam generating solutions. The seals will be internally lubricated.

The waterway seals will have automatic centering guides constructed of synthetic thermalpolymer. The guides will provide positive centering of the extendible sections within each other and the base section to insure longer service life and smoother operation.

AERIAL MONITOR

An Akron Model 3480 monitor with stow and deploy will be provided at the tip with a Akron 1250 gpm Model 5177.

The monitor's functions will be controlled electrically from two (2) separate locations. One (1) control will be located at the control console and the other at the ladder tip.

There will be a courtesy light at the tip of the aerial to illuminate the controls.

Vertical travel of this monitor will be -45 degrees to 90 degrees. Horizontal rotation will be 90 degrees to each side of the center line of the aerial device.

FLOW METER (AERIAL WATERWAY)

A Class I Flow-Minder, with totalizer, will be provided for the aerial waterway. The flowmeter will be located at the turntable control station.

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REAR INLET

A 4.50" NST inlet, with 5.00" plumbing to the aerial waterway, will be provided at the rear of the apparatus. It will be furnished with a 4.50" chrome plated, long handle cap. The outlet will be located to the drivers side of the torque box. The 4.50" NST threads will be exposed through the rear wall.

WATERWAY LOCKING SYSTEM

The aerial ladder waterway monitor will be capable of being positioned at either the fly section or at the next lower section of the ladder.

The monitor location will be changeable by the use of a single handle, located at the side of the ladder.

The handle, attached to a cam bracket, will simply be moved forward to lock the monitor at the fly section and back to lock it to the previous section.

There will be no pins to remove and reinstall.

The monitor will be operational at all times, regardless of its position, without connecting or disconnecting electrical lines.

MANUALS

Two (2) operator maintenance manuals and two (2) wiring diagrams pertaining to the aerial device will be provided with the apparatus at time of pick-up.

INITIAL INSTRUCTION

On initial delivery of the fire apparatus, the contractor will supply a qualified representative to demonstrate the apparatus and provide initial instruction to the fire department regarding the operation, care, and maintenance of the apparatus for a period of three (3) days.

SPARE FASTENERS

One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit.

PAINT

The exterior custom cab and body painting procedure will consist of a seven (7) step finishing process as follows:

1. Manual Surface Preparation - All exposed metal surfaces on the custom cab and body will be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces will be removed and sanded to a smooth finish. Exterior seams will be sealed before painting. Exterior surfaces that will not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate.
2. Chemical Cleaning and Pretreatment - All surfaces will be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum

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surfaces will be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces will be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion. A final pure water rinse will be applied to all metal surfaces.

3. Surfacer Primer - The Surfacer Primer will be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded.
4. Finish Sanding - The Surfacer Primer will be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat.
5. Sealer Primer - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated.
6. Basecoat Paint - Two coats of a high performance, two component high solids polyurethane basecoat will be applied. The Basecoat will be applied to a thickness that will achieve the proper color match. The Basecoat will be used in conjunction with a urethane clear coat to provide protection from the environment.
7. Clear Coat - Two (2) coats of Clear Coat will be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors will be Clear Coated to match the body. Paint warranty for the roll-up doors will be provided by the roll-up door manufacture.

Specifications are written to define cyclic corrosion testing, physical strengths, durability and minimum appearance requirements must be met in order for an exterior paint finish to be considered acceptable as a Pierce quality finish.

Each batch of basecoat color is checked for a proper match before painting of the cab and the body. After the cab and body are painted, the color is verified again to make sure that it matches the color standard. Electronic color measuring equipment is used to compare the color sample to the color standard entered into the computer. Color specifications are used to determine the color match. A Delta E reading is used to determine a good color match within each family color.

All removable items such as brackets, compartment doors, door hinges, and trim will be removed and separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly will be finish painted before assembly.

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The cab will be two-tone, with the upper section painted metallic Grey #479 along with a shield design on the cab face and lower section of the cab and body painted Paint Color Red #644.

PAINT - ENVIRONMENTAL IMPACT

Contractor will meet or exceed all current State regulations concerning paint operations. Pollution control will include measures to protect the atmosphere, water and soil. Controls will include the following conditions:

- Topcoats and primers will be chrome and lead free.
- Metal treatment chemicals will be chrome free. The wastewater generated in the metal treatment process will be treated on-site to remove any other heavy metals.
- Particulate emission collection from sanding operations will have a 99.99% efficiency factor.
- Particulate emissions from painting operations will be collected by a dry filter or water wash process. If the dry filter is used, it will have an efficiency rating of 98.00%. Water wash systems will be 99.97% efficient
- Water from water wash booths will be reused. Solids will be removed on a continual basis to keep the water clean.
- Paint wastes are disposed of in an environmentally safe manner.
- Empty metal paint containers will be to recover the metal.
- Solvents used in clean-up operations will be recycled on-site or sent off-site for distillation and returned for reuse.

Additionally, the finished apparatus will not be manufactured with or contain products that have ozone depleting substances. Contractor will, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with his State EPA rules and regulations.

PAINT CHASSIS FRAME ASSEMBLY

The chassis frame assembly will be painted black before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.

Components that are included with the chassis frame assembly that will be painted are:

- Frame rails
- Frame liners
- Cross members
- Axles
- Suspensions
- Steering gear
- Battery boxes
- Bumper extension weldment

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- Frame extensions
- Body mounting angles
- Rear Body support substructure (front and rear)
- Pump house substructure
- Air tanks
- Fuel tank
- Castings
- Individual piece parts used in chassis and body assembly

Components treated with epoxy E-coat protection prior to paint:

- Two (2) C-channel frame rails
- Two (2) frame liners

The E-coat process will meet the technical properties shown.

AERIAL EGRESS PAINT COLOR

The tip of the aerial device will be painted House of Color from FinishMaster. House of Color NE510Q VERMILLIN NEON AND FAST REDUCER# HOKRU310Q.

COMPARTMENT INTERIOR FINISH

The interior of the compartments will be dual action finished and not painted.

AERIAL DEVICE PAINT COLOR

The aerial device paint procedure will consist of a six (6) step finishing process as follows:

1. Manual Surface Preparation - All exposed metal surfaces on the aerial device structural components above the rotation point will be thoroughly cleaned and mechanically shot-blasted to remove metal impurities and prepare the aerial for painting.
2. Primer/Surfacer Coats - A two (2) component urethane primer/surfacer will be hand applied to the chemically treated metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface. All seams will be caulked before painting.
3. Hand Sanding - The primer/surfacer coat will be lightly sanded to an ultra smooth finish.
4. Sealer Primer Coat - A two (2) component sealer primer coat will be applied over the sanded primer.
5. Topcoat Paint - Urethane base coat will be applied to opacity for correct color matching.
6. Clearcoat - Two (2) coats of an automotive grade two (2) component urethane will be applied.

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Surfaces that will not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate.

All buy out components, such as monitor, nozzle, gauges, etc. will be supplied as received from the vendor.

Removable items such as brackets will be removed and painted separately to ensure paint coverage behind all mounted items.

The aerial device (turntable and ladder sections) will be painted Grey #479 using the six (6) step finishing process.

The support structure, rotation motor, components below the rotation point and the stabilizers will be cleaned, caulked, primed and painted high gloss black.

The tip of the ladder will be painted a contrasting color for high visibility.

VINYL & REFLECTIVE STRIPES

Two (2) stripes will be provided across the front of the vehicle and along the sides of the body. The band will consist of a 2.00" Dark Charcoal Metallic vinyl stripe at the top, with a 1" gap, then a 6.00" Black reflective stripe on the bottom.

The reflective band provided on the cab face will be below the headlights on the fiberglass.

REAR CHEVRON STRIPING

There will be alternating chevron striping located on the rear-facing vertical surface of the apparatus. Covered surfaces will include the rear wall and aluminum doors. Rear compartment doors, stainless steel access doors, and the rear bumper will not be covered.

The colors will be red and fluorescent yellow green diamond grade.

Each stripe will be 6.00" in width.

This will meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface will be covered with chevron striping.

REFLECTIVE STRIPE ON STABILIZERS

There will be a 4.00" wide fluorescent yellow green diamond grade reflective stripe provided on the forward and rear facing side of all aerial stabilizers.

JOG(S) IN REFLECTIVE BAND

The reflective band located on each side of the apparatus body will contain one (1) jog(s) and will be angled at approximately a 45 degrees when installed.

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REFLECTIVE STRIPE OUTLINE

A black outline will be applied on the top and the bottom of the reflective band. There will be one (1) set of outline stripes required.

REFLECTIVE STRIPE INSIDE COMPARTMENT DOOR

A 6.00" black reflective stripe will be provided inside two (2) compartment doors. D7 and P8.

CAB DOOR REFLECTIVE STRIPE

A 6.00" x 16.00" black reflective stripe will be provided across the interior of each cab door. The stripe will be located approximately 1.00" up from the bottom, on the door panel.

This stripe will meet the NFPA 1901 requirement.

CAB STRIPE

There will be a genuine gold leaf stripe provided on both sides of the cab in place of the chrome molding and on the cab face with shield.

GOLD LEAF LETTERING

The lettering will be totally encapsulated between two (2) layers of clear vinyl.

There will be genuine gold leaf lettering, 4.00" high, with outline and shade provided. There will be 17 letters provided.

Forty-one (41) to sixty (60) genuine gold leaf lettering, 2.00" high, with outline and shade will be provided.

Twenty-one (21) to forty (40) genuine gold leaf lettering, 7.00" high, with outline and shade will be provided.

There will be genuine gold leaf lettering, 5.00" high, with outline and shade provided. There will be 20 letters provided.

One (1) to twenty (20) genuine gold leaf lettering, 3.00" high, with outline and shade will be provided.

REFLECTIVE LETTERING

There will be reflective lettering, 2.00" high, with outline and shade provided. There will be 17 letters provided.

There will be reflective lettering, 5.00" high, with no outline or shade provided. There will be 18 letters provided.

There will be reflective lettering, 3.00" high, with outline and shade provided. There will be ten (10) letters provided.

CONTRA COSTA COUNTY FIRE PROTECTION DISTRICT

Specifications for one (1) 105' Velocity Aerial Ladder

November 2, 2017 (Quote Number 91102-17A)

There will be reflective lettering, 12.00" high, with no outline or shade provided. There will be six (6) letters provided.

There will be reflective lettering, 6.00" high, with outline and shade provided. There will be three (3) letters provided.

REFLECTIVE LETTERING

18 letters, 5.00" high will be cut into the reflective stripe to allow the painted surface to form the letter. The letters will be one (1) each side of body on the D1 and P1 doors.

three (3) letters, 4.00" high will be cut into the reflective stripe to allow the painted surface to form the letter.

PAINTED PLATE(S) FOR LETTERING/NUMERALS

There will be one (1) painted aluminum plate(s) provided for department lettering. They will be mounted on top of cab roof per LSP print and will be 36"H x 38"W in size.

SIGN KIT FOR LETTERING/NUMERALS

six (6) painted stainless steel plate(s) and holder(s) will be provided for department lettering. They will be mounted Located on cab, boom panels, front bumper center & rear. and All (6) are to be 8"H X 14"W. The only difference on the placard at the rear is that it should be pulled out to the side & Velcro to secure plate from sliding out. in size.

"AMERICAN FLAG" EMBLEMS

There will be one (1) pair of color imaged emblems, 10.00" wide, featuring a "Waiving American Flag" with pole and 9-11-01, installed one each side of cab on the upper portion of the exterior access door for the EMS compartment. The pair will be mirror images of each other.

EMBLEM

There will be two (2) reflective emblem(s), approximately 14.00" - 16.00" in size, installed one each side front cab door. the emblem will be modeled after the department submitted information (art, patch, etc).

FIRE APPARATUS PARTS MANUAL

One (1) custom parts manuals for the complete fire apparatus will be provided in hard copy with the completed unit.

One (1) compact disc (CD) will also be provided that will include all of the information from the above manual.

The manual will contain the following:

- Job number

CONTRA COSTA COUNTY FIRE PROTECTION DISTRICT

Specifications for one (1) 105' Velocity Aerial Ladder

November 2, 2017 (Quote Number 91102-17A)

- Part numbers with full descriptions
- Table of contents
- Parts section sorted in functional groups reflecting a major system, component, or assembly
- Parts section sorted in Alphabetical order
- Instructions on how to locate parts

The manual will be specifically written for the chassis and body model being purchased. It will not be a generic manual for a multitude of different chassis and bodies.

SERVICE PARTS INTERNET SITE

The service parts information included in this manual is also available on the Pierce website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.

CHASSIS SERVICE MANUALS

One (1) chassis service manuals containing parts and service information on major components will be provided with the completed unit.

One (1) compact disk (CD) will also be provided that will include all of the information from the above manual.

The manuals will contain the following sections:

- Job number
- Table of contents
- Troubleshooting
- Front Axle/Suspension
- Brakes
- Engine
- Tires
- Wheels
- Cab
- Electrical, DC
- Air Systems
- Plumbing
- Appendix

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Specifications for one (1) 105' Velocity Aerial Ladder

November 2, 2017 (Quote Number 91102-17A)

The manual will be specifically written for the chassis model being purchased. It will not be a generic manual for a multitude of different chassis and bodies.

MANUALS, CHASSIS OPERATION

Two (2) chassis operation manuals will be provided.

One (1) compact disk (CD) will also be provided that will include all of the information from the above manual.

ELECTRICAL WIRING DIAGRAMS

Two (2) electrical wiring diagrams, prepared for the model of chassis and body, will be provided.

ONE (1) YEAR MATERIAL AND WORKMANSHIP

A Pierce basic apparatus limited warranty certificate, WA0008, is included with this proposal.

THREE (3) YEAR MATERIAL AND WORKMANSHIP

The Pierce custom chassis limited warranty certificate, WA0284, is included with this proposal.

ENGINE WARRANTY

A Cummins **five (5) year** limited engine warranty will be provided. A limited warranty certificate, WA0181, is included with this proposal.

STEERING GEAR WARRANTY

A Sheppard **three (3) year** limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.

FIFTY (50) YEAR STRUCTURAL INTEGRITY

The Pierce custom chassis frame and crossmembers limited warranty certificate, WA0038, is included with this proposal.

FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY

The Pierce TAK-4 suspension limited warranty certificate, WA0050, is included with this proposal.

REAR AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY

A Meritor axle limited warranty certificate, WA0046, is included with this proposal.

ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY

A Meritor Wabco™ ABS brake system limited warranty certificate, WA0232, is included with this proposal.

TEN (10) YEAR STRUCTURAL INTEGRITY

The Pierce custom cab limited warranty certificate, WA0012, is included with this proposal.

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Specifications for one (1) 105' Velocity Aerial Ladder

November 2, 2017 (Quote Number 91102-17A)

TEN (10) YEAR PRO-RATED PAINT AND CORROSION

A Pierce cab limited pro-rated paint warranty certificate, WA0055, is included with this proposal.

FIVE (5) YEAR MATERIAL AND WORKMANSHIP

The Pierce Command Zone electronics limited warranty certificate, WA0014, is included with this proposal.

CAMERA SYSTEM WARRANTY

A Pierce fifty four (54) month warranty will be provided for the camera system.

COMPARTMENT LIGHT WARRANTY

The Pierce 12 volt DC LED strip lights limited warranty certificate, WA0203, is included with this proposal.

TRANSMISSION WARRANTY

The transmission will have a **five (5) year/unlimited mileage** warranty covering 100 percent parts and labor. The warranty will be provided by Allison Transmission.

Note: The transmission cooler is not covered under any extended warranty you may be getting on your Allison Transmission. Please review your Allison Transmission warranty for coverage limitations.

TRANSMISSION COOLER WARRANTY

The transmission cooler will carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty will also be in effect for the first three (3) years of the warranty coverage and will not exceed \$10,000 per occurrence. A copy of the warranty certificate will be submitted with the bid package.

TEN (10) YEAR STRUCTURAL INTEGRITY

The Pierce apparatus body limited warranty certificate, WA0009, is included with this proposal.

ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY

A Gortite roll-up door limited warranty will be provided. The mechanical components of the roll-up door will be warranted against defects in material and workmanship for the lifetime of the vehicle. A **six (6) year** limited warranty will be provided on painted and satin roll up doors.

The limited warranty certificate, WA0190, is included with this proposal.

TWENTY (20) YEAR AERIAL DEVICE STRUCTURAL INTEGRITY WARRANTY

The Pierce device limited warranty certificate, WA0052, is included with this proposal.

AERIAL SWIVEL WARRANTY

An Amity five (5) year limited swivel warranty will be provided. A copy of the warranty certificate will be submitted with the bid package.

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Specifications for one (1) 105' Velocity Aerial Ladder

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AERIAL WATERWAY WARRANTY

An Amity ten (10) year limited waterway warranty will be provided. A copy of the warranty certificate will be submitted with the bid package.

FOUR (4) YEAR PRO-RATED PAINT AND CORROSION

A Pierce aerial device limited pro-rated paint warranty certificate, WA0047, is included with this proposal.

SIX (6) YEAR GENERATOR MATERIAL AND WORKMANSHIP WARRANTY

A Harrison Hydra-Gen limited warranty certificate, WA0285, is included with this proposal.

TEN (10) YEAR PRO-RATED PAINT AND CORROSION

A Pierce body limited pro-rated paint warranty certificate, WA0057, is included with this proposal.

THREE (3) YEAR MATERIAL AND WORKMANSHIP

The Pierce Goldstar gold leaf lamination limited warranty limited warranty certificate, WA0018, is included with this proposal.

VEHICLE STABILITY CERTIFICATION

The fire apparatus manufacturer will provide a certification stating the apparatus complies with NFPA 1901, current edition, section 4.13, Vehicle Stability. The certification will be provided at the time of bid.

ENGINE INSTALLATION CERTIFICATION

The fire apparatus manufacturer will provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification will be provided at the time of delivery.

POWER STEERING CERTIFICATION

The fire apparatus manufacturer will provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification will be provided at the time of bid.

CAB INTEGRITY CERTIFICATION

The fire apparatus manufacturer will provide a cab integrity certification with this proposal. The certification will state that the cab has been tested and certified by an independent third-party test facility. Testing events will be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer will provide a state-licensed professional engineer to witness and certify all testing events. Testing will meet or exceed the requirements below:

- European Occupant Protection Standard ECE Regulation No.29.

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Specifications for one (1) 105' Velocity Aerial Ladder

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- SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks.
- SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks.

Roof Crush

The cab will be subjected to a roof crush force of 22,050 lb. This value meets the ECE 29 criteria and is equivalent to the front axle rating up to a maximum of 10 metric tons.

Additional Roof Crush

The same cab will be subjected to a roof crush force of 100,000 lbs. This value exceeds the ECE 29 criteria by nearly 4.5 times.

Side Impact

The same cab will be subjected to dynamic preload where a 13,275 lb moving barrier slams into the side of the cab at 5.5 mph at a force of 13,000 ft-lbs. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab will see in a rollover incident.

Frontal Impact

The same cab will withstand a frontal impact of 32,600 ft-lbs of force using a moving barrier in accordance with SAE J2420.

Additional Frontal Impact

The same cab will withstand a frontal impact of 65,200 ft-lbs of force using a moving barrier, (twice the force required by SAE J2420).

The same cab will withstand all tests without any measurable intrusion into the survival space of the occupant area.

CAB DOOR DURABILITY CERTIFICATION

Robust cab doors help protect occupants. Cab doors will survive a 200,000 cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder will certify that the sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear.

WINDSHIELD WIPER DURABILITY CERTIFICATION

Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers will survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 *Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles*. The bidder will certify that the wiper system design has been tested and that the wiper system has met these criteria.

ELECTRIC WINDOW DURABILITY CERTIFICATION

Cab window roll-up systems can cause maintenance problems if not designed for long service life. The window regulator design will complete 30,000 complete up-down cycles and still function normally

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Specifications for one (1) 105' Velocity Aerial Ladder

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when finished. The bidder will certify that sample doors and windows similar to those provided on the apparatus have been tested and have met these criteria without malfunction or significant component wear.

SEAT BELT ANCHOR STRENGTH

Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design will withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder will certify that each anchor design was pull tested to the required force and met the appropriate criteria.

SEAT MOUNTING STRENGTH

Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design will be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder will certify that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.

CAB DEFROSTER CERTIFICATION

Visibility during inclement weather is essential to safe apparatus performance. The defroster system will clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure And Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. The bidder will certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.

CAB HEATER CERTIFICATION

Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. The cab heaters will warm the cab 75 F from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder will certify that a substantially similar cab has been tested and has met these criteria.

AMP DRAW REPORT

The bidder will provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

The manufacturer of the apparatus will provide the following:

- Documentation of the electrical system performance tests.
- A written load analysis, which will include the following:
 - The nameplate rating of the alternator.
 - The alternator rating under the conditions specified per:
 - Applicable NFPA 1901 or 1906 (Current Edition).
 - The minimum continuous load of each component that is specified per:

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Specifications for one (1) 105' Velocity Aerial Ladder

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- Applicable NFPA 1901 or 1906 (Current Edition).
- Additional loads that, when added to the minimum continuous load, determine the total connected load.
- Each individual intermittent load.

All of the above listed items will be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).

END OF PROPOSAL



Fire and Rescue Apparatus

Four (4) Year Pro-Rated Paint and Corrosion

Aerial Device

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Aerial device shall be free from blistering, peeling, corrosion or any other adhesion defect caused by defective manufacturing methods or paint material selection for exterior surfaces.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Four (4) Years
Conditions and Exclusions: See Also Paragraphs 2 thru 4	<p>This limited warranty is applicable to the vehicle in the following percentage costs of warranty repair, if any:</p> <p>Topcoat Durability & Appearance: Gloss, Color Retention & Cracking 0-24 months 100% 25-48 months 50%</p> <p>Integrity of Coating System: Adhesion, Blistering/Bubbling 0-24 months 100% 25-48 months 50%</p> <p>Corrosion: Dissimilar Metal and Crevice 0-24 months 100% 25-48 months 50%</p> <p>Corrosion Perforation 0-24 months 100% 25-48 months 50%</p> <p>This limited warranty applies only to exterior paint.</p> <p>Items not covered by this warranty include: (a) Damage from lack of maintenance and cleaning (proper cleaning and maintenance procedures are detailed in the Pierce operation and maintenance manual). (b) UV paint fade.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

One (1) Year Material and Workmanship

Basic Apparatus

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Portions of the apparatus manufactured by Pierce shall be free from defects in material and workmanship
Warranty Begins:	The date the apparatus is placed in service, or 60 days from the original buyer invoice date, whichever comes first.
Warranty Period Ends After:	Twelve (12) months.
Conditions and Exclusions: See Also Paragraphs 2 thru 4	No specific exclusions apply

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Ten (10) Year Structural Integrity Apparatus Body

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The apparatus body shall be free from structural failures caused by defects in material and workmanship
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Ten (10) Years - or - 100,000 Miles
Conditions and Exclusions: See Also Paragraphs 2 thru 4	<p>This warranty applies only to the body tubular support and mounting structures and other structural components of the body of the vehicle model, as identified in the Pierce specifications for the Fire and Rescue Apparatus.</p> <p>This warranty does not apply to damage caused by corrosion.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Ten (10) Year Structural Integrity Custom Cab

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The Pierce Custom Cab shall be free from structural failures caused by defects in material and workmanship
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Ten (10) Years - or - 100,000 Miles
Conditions and Exclusions: See Also Paragraphs 2 thru 4	<p>This warranty applies only to the cab tubular support and mounting structures and other structural components of the cab of the vehicle model, as identified in the Pierce specifications for the Fire and Rescue Apparatus.</p> <p>This warranty does not apply to damage caused by corrosion.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Five (5) Year Material and Workmanship

Command Zone Electronics

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Command Zone control modules shall be free from failures caused by defects in material and workmanship
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Five (5) Years
Conditions and Exclusions: See Also Paragraphs 2 thru 4	This limited warranty applies to all of the control modules for the Command Zone system, including the full color graphic displays. Related wire harnesses, cables and connectors are not covered under this limited warranty and are instead covered under the Pierce One Year Basic Apparatus Limited Warranty.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Three (3) Year Material and Workmanship

Goldstar® Gold Leaf Lamination

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Each Goldstar® gold leaf lamination shall be free from defects in material and workmanship.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Three (3) Years
Conditions and Exclusions: See Also Paragraphs 2 thru 4	This warranty does not cover damage from lack of maintenance and cleaning (proper cleaning and maintenance procedures are detailed in the Pierce operation and maintenance manual).

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Lifetime Fifty (50) Year Structural Integrity

Chassis Frame & Crossmembers

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Custom chassis frame rail and cross members manufactured by Pierce shall be free from defects in material and workmanship
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Fifty (50) Years (Expected Life of Apparatus)
Conditions and Exclusions:	This warranty does not apply to damage caused by corrosion.
See Also Paragraphs 2 thru 4	

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Three (3) Year Material and Workmanship TAK-4 Independent Front Suspension

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The TAK-4 Front Independent Suspension and Steering Gears shall be free from defects in material and workmanship.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Three (3) Years -or- 30,000 Miles
Conditions and Exclusions: See Also Paragraphs 2 thru 4	This limited warranty excludes brake pads, brake rotors, seal boots and shock absorbers.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Twenty (20) Year Structural Integrity

Pierce Aerial Device

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Each new Pierce Aerial Device shall be free from defects in material and workmanship. Aerial Device Models Covered by this warranty include: Aerial Platforms Aerial Ladders SkyBoom
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Twenty (20) Years - or - 100,000 Miles
Conditions and Exclusions: See Also Paragraphs 2 thru 4	<p>This warranty applies only to the torque box, turntable, aerial sections and other structural components of the aerial device, as identified in the Pierce specifications for the aerial device. This warranty shall be void if, or to the extent that the aerial device is not maintained in strict compliance with NFPA Standard 1911 in effect at time of sale, including such periodic inspections and testing by qualified third parties as are required by that Standard as it may be in effect from time to time. Proof of such compliance shall accompany any claims under this warranty. Third party testing agencies known to Pierce to be qualified for such purposes may be obtained from the Pierce Customer Service Department</p> <p>This warranty does not apply to damage caused by corrosion.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Ten (10) Year Pro-Rated Paint and Corrosion

Cab

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Exterior surfaces of the cab painted by Pierce shall be free from blistering, peeling, corrosion or any other adhesion defect caused by defective manufacturing methods or paint material selection.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Ten (10) Years
Conditions and Exclusions:	<p>This limited warranty is applicable to the vehicle in the following percentage costs of warranty repair, if any:</p> <p>Topcoat Durability & Appearance: Gloss, Color Retention & Cracking 0-72 months 100% 73-96 months 50% 97-120 months 25%</p> <p>Integrity of Coating System: Adhesion, Blistering/Bubbling 0-36 months 100% 37-84 months 50% 85-120 months 25%</p> <p>Corrosion: Dissimilar Metal and Crevice 0-36 months 100% 37-48 months 50% 49-72 months 25% 73-120 months 10%</p> <p>Corrosion Perforation 0-120 months 100%</p> <p>This limited warranty applies only to exterior paint. Paint on the vehicle's interior is warranted only under the Pierce Basic One Year Limited Warranty.</p> <p>Items not covered by this warranty include: (a) Damage from lack of maintenance and cleaning (proper cleaning and maintenance procedures are detailed in the Pierce operation and maintenance manual). (b) UV paint fade. (c) Any cab not manufactured by Pierce.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Ten (10) Year Pro-Rated Paint and Corrosion

Custom Body

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Exterior surfaces of the body shall be free from blistering, peeling, corrosion or any other adhesion defect caused by defective manufacturing methods or paint material selection.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Ten (10) Years
Conditions and Exclusions:	<p>This limited warranty is applicable to the vehicle in the following percentage costs of warranty repair, if any:</p> <p>Topcoat Durability & Appearance: Gloss, Color Retention & Cracking 0-72 months 100% 73-96 months 50% 97-120 months 25%</p> <p>Integrity of Coating System: Adhesion, Blistering/Bubbling 0-36 months 100% 37-84 months 50% 85-120 months 25%</p> <p>Corrosion: Dissimilar Metal and Crevice 0-36 months 100% 37-48 months 50% 49-72 months 25% 73-120 months 10%</p> <p>Corrosion Perforation 0-120 months 100%</p> <p>This limited warranty applies only to exterior paint. Paint on the vehicle's interior is warranted only under the Pierce Basic One Year Limited Warranty.</p> <p>Items not covered by this warranty include: (a) Damage from lack of maintenance and cleaning (proper cleaning and maintenance procedures are detailed in the Pierce operation and maintenance manual). (b) UV paint fade. (c) Any cab not manufactured by Pierce.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Cummins Warranty

Worldwide

Fire Apparatus/Crash Trucks



Coverage

Products Warranted

This Warranty applies to new diesel Engines sold by Cummins and delivered to the first user on or after April 1, 2007, that are used in fire apparatus truck and crash truck* applications Worldwide.

Base Engine Warranty

The Base Engine Warranty covers any failures of the Engine which result, under normal use and service, from a defect in material or factory workmanship (Warrantable Failure). This Coverage begins with the sale of the Engine by Cummins and ends five years or 100,000 miles (160,935 kilometers), whichever occurs first, after the date of delivery of the Engine to the first user.

Engine aftertreatment components included in the Cummins Critical Parts List (CPL) and marked with a Cummins part number are covered under Base Engine Warranty.

Additional Coverage is outlined in the Emission Warranty section.

These Warranties are made to all Owners in the chain of distribution and Coverage continues to all subsequent Owners until the end of the periods of Coverage.

Cummins Responsibilities

Cummins will pay for all parts and labor needed to repair the damage to the Engine resulting from a Warrantable Failure.

Cummins will pay for the lubricating oil, antifreeze, filter elements, belts, hoses and other maintenance items that are not reusable due to the Warrantable Failure.

Cummins will pay for reasonable labor costs for Engine removal and reinstallation when necessary to repair a Warrantable Failure.

Cummins will pay reasonable costs for towing a vehicle disabled by a Warrantable Failure to the nearest authorized repair location. In lieu of the towing expense, Cummins will pay reasonable costs for mechanics to travel to and from the location of the vehicle, including meals, mileage and lodging when the repair is performed at the site of the failure.

Owner Responsibilities

Owner is responsible for the operation and maintenance of the Engine as specified in Cummins Operation and Maintenance Manuals. Owner is also responsible for providing proof that all recommended maintenance has been performed.

Before the expiration of the applicable Warranty, Owner must notify a Cummins distributor, authorized dealer or other repair location approved by Cummins of any Warrantable Failure and make the Engine available for repair by such facility. Except for Engines disabled by a Warrantable Failure, Owner must also deliver the Engine to the repair facility.

Service locations are listed on the Cummins Worldwide Service Locator at cummins.com.

Owner is responsible for the cost of lubricating oil, antifreeze, filter elements and other maintenance items provided during Warranty repairs unless such items are not reusable due to the Warrantable Failure.

Owner is responsible for communication expenses, meals, lodging and similar costs incurred as a result of a Warrantable Failure.

Owner is responsible for non-Engine repairs and for "downtime" expenses, cargo damage, fines, all applicable taxes, all business costs and other losses resulting from a Warrantable Failure.

Owner is responsible for a \$100 (U.S. Dollars) deductible per each service visit under this plan in the 3rd, 4th and 5th years of Base Engine Warranty. The deductible will not be charged during the first 2 years of the Base Engine Warranty.

Limitations

Cummins is not responsible for failures or damage resulting from what Cummins determines to be abuse or neglect, including, but not limited to: operation without adequate coolants or lubricants; overfueling; overspeeding; lack of maintenance of lubricating, cooling or intake systems; improper storage, starting, warm-up, run-in or shutdown practices; unauthorized modifications of the Engine.

Any unauthorized modifications to the aftertreatment could negatively effect emissions certification and void Warranty.

Cummins is also not responsible for failures caused by incorrect oil, fuel or diesel exhaust fluid or by water, dirt or other contaminants in the fuel, oil or diesel



exhaust fluid.

This Warranty does not apply to accessories supplied by Cummins which bear the name of another company. Such non-warranted accessories include, but are not limited to: alternators, starters, fans, air conditioning compressors, clutches, filters, transmissions, torque converters, vacuum pumps, power steering pumps, fan drives and air compressors. Cummins branded alternators and starters are covered for the first two years from the date of delivery of the Engine to the first user, or the expiration of the Base Engine Warranty, whichever occurs first.

Failures resulting in excessive oil consumption are not covered beyond the duration of the Coverage or 100,000 miles (160,935 kilometers) or 7,000 hours from the date of delivery of the Engine to the first user, whichever of the three occurs first. Before a claim for excessive oil consumption will be considered, Owner must submit adequate documentation to show that consumption exceeds Cummins published standards.

Failures of belts and hoses supplied by Cummins are not covered beyond the first year from the date of delivery of the Engine to the first user or the duration of the Warranty, whichever occurs first.

Parts used to repair a Warrantable Failure may be new Cummins parts, Cummins approved rebuilt parts or repaired parts. Cummins is not responsible for failures resulting from the use of parts not approved by Cummins.

A new Cummins or Cummins approved rebuilt part used to repair a Warrantable Failure assumes the identity of the part it replaced and is entitled to the remaining Coverage hereunder.

Cummins Inc. reserves the right to interrogate Electronic Control Module (ECM) data for purposes of failure analysis.

CUMMINS DOES NOT COVER WEAR OR WEAROUT OF COVERED PARTS.

CUMMINS IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

THIS WARRANTY AND THE EMISSION WARRANTY SET FORTH HEREINAFTER ARE THE SOLE WARRANTIES MADE BY CUMMINS IN REGARD TO THESE ENGINES. CUMMINS MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Emission Warranty

Products Warranted

This Emission Warranty applies to new Engines marketed by Cummins that are used in the United States** in vehicles designed for transporting persons or property on a street or highway. This Warranty applies to Engines delivered to the first user on or after September 1, 1992.

Coverage

Cummins warrants to the first user and each subsequent purchaser that the Engine is designed, built and equipped so as to conform at the time of sale by Cummins with all U.S. federal emission regulations applicable at the time of manufacture and that it is free from defects in material or factory workmanship which would cause it not to meet these regulations within the longer of the following periods: (A) Five years or 100,000 miles (160,935 kilometers) of operation, whichever occurs first, as measured from the date of delivery of the Engine to the first user or (B) The Base Engine Warranty.

If the vehicle in which the Engine is installed is registered in the state of California, a separate California Emission Warranty also applies.

Limitations

Failures, other than those resulting from defects in material or factory workmanship, are not covered by this Warranty.

Cummins is not responsible for failures or damage resulting from what Cummins determines to be abuse or neglect, including, but not limited to: operation without adequate coolants or lubricants; overfueling; overspeeding; lack of maintenance of lubricating, cooling or intake systems; improper storage, starting, warm-up, run-in or shutdown practices; unauthorized modifications of the Engine.

Any unauthorized modifications to the aftertreatment could negatively effect emissions certification and void Warranty.

Cummins is also not responsible for failures caused by incorrect oil, fuel or diesel exhaust fluid or by water, dirt or other contaminants in the fuel, oil or diesel exhaust fluid.

Cummins is not responsible for non-Engine repairs, "downtime" expenses, cargo damage, fines, all applicable taxes, all business costs or other losses resulting from a Warrantable Failure.

**CUMMINS IS NOT RESPONSIBLE FOR INCIDENTAL
OR CONSEQUENTIAL DAMAGES.**

* Airport operated crash trucks and fire department
operated trucks employed to respond to fires,
hazardous material releases, rescue and other
emergency-type situations.

** United States includes American Samoa, the
Commonwealth of Northern Mariana Islands, Guam,
Puerto Rico and the U.S. Virgin Islands.



Cummins Inc.
Box 3005
Columbus, IN 47202-3005
U.S.A.

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NEW PRODUCT WARRANTY



PARTICIPATING OEM SALES DISTRIBUTOR SALES

LIMITED WARRANTY ON NEW ALLISON AUTOMATIC TRANSMISSIONS USED IN EMERGENCY VEHICLE APPLICATIONS

Allison Transmission will provide for repairs or replacement, at its option, during the warranty period of each new Allison transmission listed below that is installed in an Emergency Vehicle in accordance with the following terms, conditions, and limitations.

WHAT IS COVERED

- **WARRANTY APPLIES** — This warranty is for new Allison transmission models listed below installed in an Emergency Vehicle and is provided to the original and any subsequent owner(s) of the vehicle during the warranty period.
- **REPAIRS COVERED** — The warranty covers repairs or replacement, at Allison Transmission's option, to correct any transmission malfunction resulting from defects in material or workmanship occurring during the warranty period. Needed repairs or replacements will be performed using the method Allison Transmission determines most appropriate under the circumstances.
- **TOWING** — Towing is covered to the nearest Allison Transmission Distributor or authorized Dealer only when necessary to prevent further damage to your transmission.
- **PAYMENT TERMS** — Warranty repairs, including parts and labor, will be covered per the schedule shown in the chart contained in section "APPLICABLE MODELS, WARRANTY LIMITATIONS, AND ADJUSTMENT SCHEDULE."
- **OBTAINING REPAIRS** — To obtain warranty repairs, take the vehicle to any Allison Transmission Distributor or authorized Dealer within a reasonable amount of time and request the needed repairs. A reasonable amount of time must be allowed for the Distributor or Dealer to perform necessary repairs.
- **TRANSMISSION REMOVAL AND REINSTALLATION** — Labor costs for the removal and re-installation of the transmission, when necessary to make a warranty repair, are covered by this warranty.
- **WARRANTY PERIOD** — The warranty period for all coverages shall begin on the date the transmission is delivered to the first retail purchaser, with the following exception:

Demonstration Service - A transmission in a new truck or bus may be demonstrated to a total of 5000 miles (8000 kilometers). If the vehicle is within this limit when sold to a retail purchaser, the warranty start date is the date of purchase. Normal warranty services are applicable to the demonstrating Dealer. Should the truck or bus be sold to a retail purchaser after these limits are reached, the warranty period will begin on the date the vehicle was first placed in demonstration service and the purchaser will be entitled to the remaining warranty.

APPLICABLE MODELS, WARRANTY LIMITATIONS, AND ADJUSTMENT SCHEDULE

APPLICABLE MODELS	WARRANTY LIMITATIONS (Whichever occurs first)		ADJUSTMENT CHARGE TO BE PAID BY THE CUSTOMER	
	Months	Transmission Miles Or Kilometers	Parts	Labor
MT, MD 3000, 3200, 3500, 3700	0-24	No Limit	No Charge	No Charge
HT with Hydraulic Controls	0-24	No Limit	No Charge	No Charge
AT, 1000 Series™, 2000 Series™, 2400 Series™	0-36	No Limit	No Charge	No Charge
HT with Electronic Controls	0-60	No Limit	No Charge	No Charge
HD 1000 EVS, 2100 EVS, 2200 EVS 2350 EVS, 2500 EVS, 2550 EVS, 3000 EVS, 3500 EVS, 4000, 4000 EVS, 4500, 4500 EVS, 4700, 4700 EVS, 4800, 4800 EVS	0-60	No Limit	No Charge	No Charge

WHAT IS NOT COVERED

- **DAMAGE DUE TO ACCIDENT, MISUSE, or ALTERATION** — Defects and damage caused as the result of any of the following are not covered:
 - Flood, collision, fire, theft, freezing, vandalism, riot, explosion, or objects striking the vehicle;
 - Misuse of the vehicle;
 - Installation into unapproved applications and installations;
 - Alterations or modification of the transmission or the vehicle, and
 - Damage resulting from improper storage (refer to long-term storage procedure outlined in the applicable Allison Service Manual)
 - Anything other than defects in Allison Transmission material or workmanship

NOTE: This warranty is void on transmissions used in vehicles currently or previously titled as salvaged, scrapped, junked, or totaled.

- **CHASSIS, BODY, and COMPONENTS** — The chassis and body company (assemblers) and other component and equipment manufacturers are solely responsible for warranties on the chassis, body, component(s), and equipment they provide. Any transmission repair caused by an alteration(s) made to the Allison transmission or the vehicle which allows the transmission to be installed or operated outside of the limits defined in the appropriate Allison Installation Guideline is solely the responsibility of the entity making the alteration(s).
- **DAMAGE CAUSED by LACK of MAINTENANCE or by the USE of TRANSMISSION FLUIDS NOT RECOMMENDED in the OPERATOR'S MANUAL** — Defects and damage caused by any of the following are not covered:
 - Failure to follow the recommendations of the maintenance schedule intervals applicable to the transmission;
 - Failure to use transmission fluids or maintain transmission fluid levels recommended in the Operator's Manual.
- **MAINTENANCE** — Normal maintenance (such as replacement of filters, screens, and transmission fluid) is not covered and is the owner's responsibility.
- **REPAIRS by UNAUTHORIZED DEALERS** — Defects and damage caused by a service outlet that is not an authorized Allison Transmission Distributor or Dealer are not covered.
- **USE of OTHER THAN GENUINE ALLISON TRANSMISSION PARTS** — Defects and damage caused by the use of parts that are not genuine Allison Transmission parts are not covered.
- **EXTRA EXPENSES** — Economic loss and extra expenses are not covered. Examples include but are not limited to: loss of vehicle use; inconvenience; storage; payment for loss of time or pay; vehicle rental expense; lodging; meals; or other travel costs.
- **"DENIED PARTY" OWNERSHIP** — Warranty repair parts and labor costs are not reimbursed to any participating or non-participating OEMs, dealers or distributors who perform warranty work for, or on behalf of, end users identified by the United States as being a "denied party" or who are citizens of sanctioned or embargoed countries as defined by the U.S. Department of Treasury Office of Foreign Assets Control. Furthermore, warranty reimbursements are not guaranteed if the reimbursement would be contrary to any United States export control laws or regulations as defined by the U.S. Department of Commerce, the U.S. Department of State, or the U.S. Department of Treasury.

OTHER TERMS APPLICABLE TO CONSUMERS AS DEFINED by the MAGNUSON-MOSS WARRANTY ACT

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Allison Transmission does not authorize any person to create for it any other obligation or liability in connection with these transmissions.

ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO THESE TRANSMISSIONS IS LIMITED IN DURATION TO THE DURATION OF THIS WRITTEN WARRANTY. PERFORMANCE OF REPAIRS AND NEEDED ADJUSTMENTS IS THE EXCLUSIVE REMEDY UNDER THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY. ALLISON TRANSMISSION SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (SUCH AS, BUT NOT LIMITED TO, LOST WAGES OR VEHICLE RENTAL EXPENSES) RESULTING FROM BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY.**

** Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

OTHER TERMS APPLICABLE TO OTHER END-USERS

THIS WARRANTY IS THE ONLY WARRANTY APPLICABLE TO THE ALLISON TRANSMISSION MODELS LISTED ABOVE AND IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ALLISON TRANSMISSION DOES NOT AUTHORIZE ANY PERSON TO CREATE FOR IT ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH TRANSMISSIONS. ALLISON TRANSMISSION SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM BREACH OF THIS WARRANTY OR ANY IMPLIED WARRANTY.

QUESTIONS

If you have any questions regarding this warranty or the performance of warranty obligations, you may contact any Allison Transmission Distributor or Dealer or write to:

Allison Transmission, Inc.
P.O. Box 894
Indianapolis, IN 46206-0894
Attention: Warranty Administration PF-9



Fire and Rescue Apparatus

54 Months Material and Workmanship

Camera System

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	This limited warranty covers repairs to correct any defect related to materials or workmanship of the Sharpvision camera system installed on the apparatus occurring during the warranty period.
Warranty Begins:	The date of delivery.
Warranty Period Ends After:	Fifty - Four (54) months
Conditions and Exclusions: See Also Paragraphs 2 thru 4	This limited warranty does not apply to related wire harnesses, cables, and connectors, which are covered by the Pierce one (1) year basic apparatus limited warranty.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Pierce Warranty Statement for Gortite Roll Up Doors Rev 2/24/2011

All mechanical components of the door shall be warranted to be free from defects in materials and workmanship for the lifetime of the vehicle. All parts covered under this warranty shall be to the original owner.

A&A manufacturing warrants that painted doors shall be free of blistering, peeling, bubbling, or any other adhesion defect caused by defective manufacturing methods or paint material selection. The time period for the coverage shall be 6 years from date of door shipment to Pierce. Satin anodized finish doors shall be warranted for 6 years against corrosion defects from date of door shipment to Pierce. Replacement of decals/Scotchlite is not covered.

The maximum amount A&A will reimburse for labor is \$60.00 per hour and the maximum amount of time allowed for repair is as follows:

Door	1.0 Hr.
Slat Replacement	1.0 Hr.
Pennant Plate Replacement	1.0 Hr.
Roller Replacement	.5 Hr.
Seal Replacement	.5 Hr.
Switch/Magnet Replacement	1.0 Hr.
Travel Time	4.0 Hr.



AMITY FIRE AND SAFETY, INC.

3750 CHESTNUT ROAD
ALBURTIS, PA 18011-0451
Phone: 610-966-3115
Fax: 610-965-6313

* STANDARD FIVE YEAR WARRANTY *

(standard warranty is in effect for parts shipped after 4/15/10)

Three Function Swivel

A. PRESHIPMENT TESTING The Three Function Swivel fabricated by Amity which is exposed to pressure during normal use is subject to final inspection using the following pressure minimums:

1. Hydrostatic applications will be tested to 400 PSI unless specified otherwise on approved drawings. Operating pressures on installed systems are not to exceed 250 PSI at any point in the system. Warranty will be voided and Amity will not be held liable for failure and/or damage occurring from Water Hammering or freezing of water in any system.
2. Hydraulic applications will be tested to 4000 PSI. System operating pressure in application to be 3000 PSI maximum.
3. Dielectric and Continuity Test all circuits. 30 Amp max current loading.

B. THREE FUNCTION SWIVEL MAINTENANCE – Our Three Function Swivel has been fully tested at assembly. Under no circumstances is there to be any maintenance performed internally or externally to the Three Function Swivel by Purchaser or any other third party other than an authorized representative of or Amity itself. The Three Function Swivel is sealed and must remain so. The Three Function Swivel is designed for a long maintenance free life. Should any problems occur or replacement be necessary, first contact Amity. There is to be no field maintenance performed on the Three Function Swivel .

C. MOUNTING REQUIREMENTS – The following are the mounting requirements for the Three Function Swivel:

1. Mounting points and methods are to be determined at the initial design stage. All drawings and applicable documentation must be signed off by both parties and filed for future reference. No deviation to the approved mounting is allowed without approval from Amity.
2. The Three Function Swivel is to be mounted concentric to the center of the turntable bearing.
3. All inlet and outlet plumbing to conform to swivel mounting, under no circumstances is the Three Function Swivel to be positioned to match connections. This will avoid putting excessive loads on the Three Function Swivel. All tubing or piping to be supported by means other than the Three Function Swivel.

D. LIMITED WARRANTY, LIMITATIONS, CONDITIONS AND PROCEDURES REQUIRED.

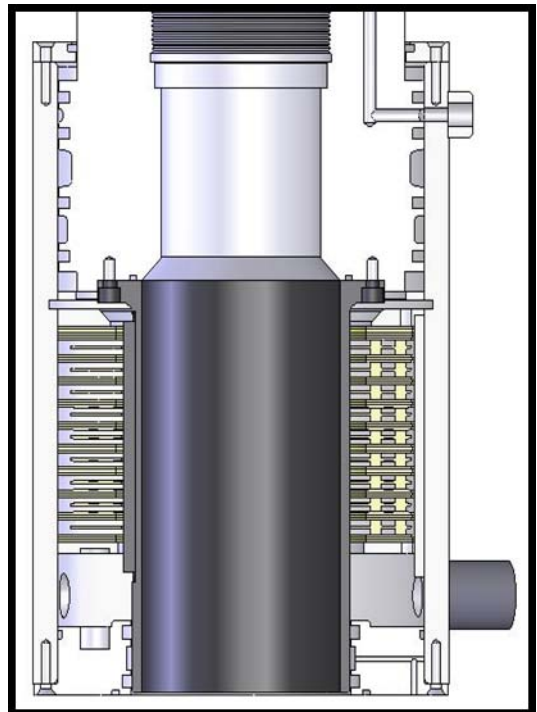
1. The Three Function Swivel is warranted to be free of defects in labor and/or materials for a period of five (5) years from the Date of Service. For purposes here, "Date of Service" shall mean the date when the Three Function Swivel, or the unit to which the Three Function Swivel is incorporated, passes final Underwriters Laboratory testing, or similarly compliant testing, and is certified for service. Evidence of such Date of Service shall be required in connection with any warranty claim by Purchaser.
2. The Three Function Swivel shall be repaired or replaced at the sole option and expense of the Amity provided the Three Function Swivel alleged to be defective was used for its intended normal use of operation and subject to the following qualifications and limitations.
3. Any alteration of the Three Function Swivel without consent from Amity is strictly forbidden and shall void warranty.
4. No welding shall be performed on finished Three Function Swivel.
5. No responsibility is assumed for any malfunctions or damages which are occasionally caused by foreign objects which may be ingested into water or hydraulic systems such as, but not limited to stones, sand or metal chips.
6. Amity assumes responsibility for our Three Function Swivel, which is defective only, and therefore, it will not assume responsibility for labor to either remove or install our Three Function Swivel unless it agrees in writing to assume such responsibility.
7. Unless otherwise approved in writing by the Amity all returns of defective Three Function Swivels (or allegedly defective Three Function Swivels) are at Purchaser's expense and must include a RGA number issued by the Amity.

8. All warranty claims must be presented at the time the problem occurs, or as soon as practical thereafter, either called or faxed to the Amity and include the numbers on the assembly's Amity's label with a detailed explanation of the difficulty in order for the matter to be appropriately evaluated and resolved.
9. Amity will not be held liable for damage incurred during shipment.
10. No responsibility shall be assumed for misuse or improper mounting, unreasonable use or abuse of the Three Function Swivel and or failure to provide or use improper maintenance, failure to follow written installation and use in instruction or any use other than the customary designed use.

THE REMEDIES PROVIDED IN THE ABOVE EXPRESS LIMITED WARRANTY AND ARE THE SOLE AND EXCLUSIVE REMEDIES AVAILABLE. NO OTHER EXPRESS WARRANTIES ARE MADE. ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE ARE LIMITED IN DURATION AS SET FORTH ABOVE. IN NO EVENT SHALL THE AMITY ASSUME OR BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

THE WITHIN DESCRIBED WARRANTY SHALL ONLY BE AFFORDED TO THE ORIGINAL PURCHASER OR FOR INCORPORATION INTO ANOTHER UNIT AND TO FIRST PURCHASER AS PART OF COMPLETED UNIT, HOWEVER, THE WARRANTY PERIOD OF FIVE YEARS IS FROM THE DATE OF SERVICE WITH THE UNDERSTANDING IT IS INSTALLED WITHIN A REASONABLE TIME PERIOD.

Dated: _____, 20__





AMITY FIRE AND SAFETY, INC.

3750 CHESTNUT ROAD
ALBURTIS, PA 18011-0451
Phone: 610-966-3115
Fax: 610-965-6313

* STANDARD TEN YEAR WARRANTY *

(standard warranty is in effect for parts shipped after 4/15/10)

Telescopic Waterways

A. PRESHIPMENT TESTING All waterways fabricated by Amity are final inspected using the following pressure minimums:

1. Hydrostatic applications will be tested to 400 PSI unless specified otherwise on approved drawings. Operating pressures on installed systems are not to exceed 250 PSI at any point in the system. Warranty will be voided and Amity will not be held liable for failure and/or damage occurring from Water Hammering or freezing of water in any system.

B. COMPONENTS DESCRIPTION AND MAINTENANCE

1. All components are thoroughly greased at assembly. Since internally lubricated seals are used, regular greasing is not required. We recommend components not be greased at installation.
2. Slip Tube Assemblies may be greased at the Amity's regularly scheduled Aerial Inspections. The seals in the Slip Tube Assemblies are self-lubricating, so greasing is not mandatory. We do recommend a visual inspection of the Slip Tube Assembly while it is fully extended after initial installation, from that point on we recommend inspection every ten hours of aerial operation. If any deposits of aluminum appear, they are to be rubbed off using a Teflon scouring pad. Slip Tube Assemblies are designed to give long maintenance free service; however, like any product, problems may occur and periodic visual inspections will aid in determining if a potential problem exists and warrants a call to us. Care must be taken to keep debris off of extended tubes. We recommend wiping tubes with light oil (10 weight) or hydraulic oil after use, if tubes appear to have contamination on them. Under no circumstance are tubes to be cleaned with lacquer thinner, or any other solvent.

C. LIMITED WARRANTY, LIMITATIONS, CONDITIONS AND PROCEDURES REQUIRED.

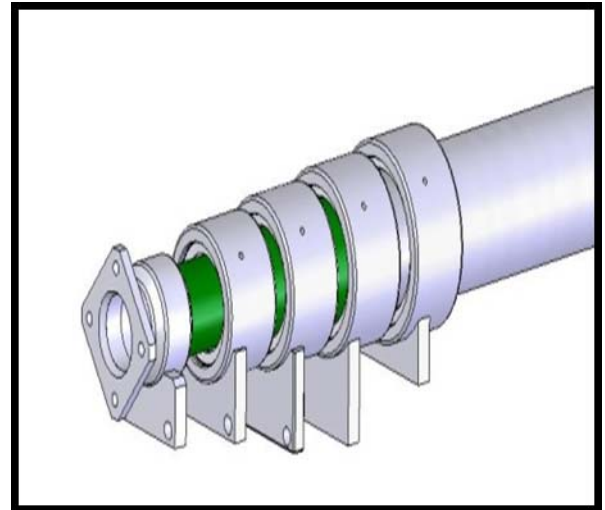
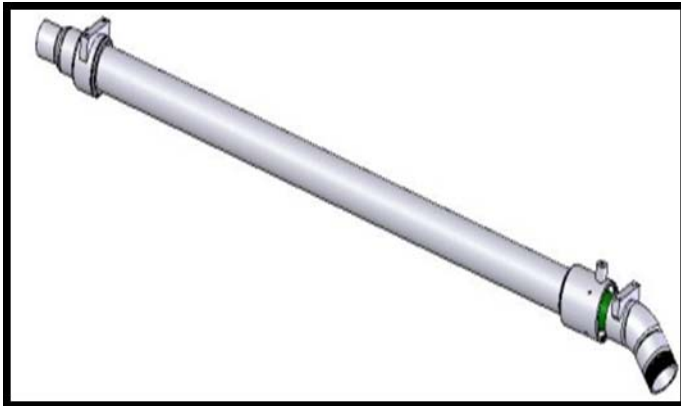
1. Products are warranted to be free of defects in labor and/or materials for a period of ten years from the date of purchase from the Amity and shall be repaired or replaced at the sole option and expense of the Amity provided the products alleged to be defective was used for its intended normal use operation and subject to the following qualifications and limitations.
2. Any alteration of product without consent from Amity is strictly forbidden and shall void warranty.
3. No welding shall be performed on finished product.
4. No responsibility is assumed for any malfunctions or damages which are occasionally caused by foreign objects which may be ingested into water system such as, but not limited to stones, sand or metal chips.
5. Amity assumes responsibility for our product, which is defective only, and therefore, it will not assume responsibility for labor to either remove or install our product unless it agrees in writing to assume such responsibility.
6. Unless otherwise approved in writing by the Amity all returns of defective (or allegedly defective products) are at Purchaser's expense and must include a RGA number issued by the Amity.
7. All warranty claims must be presented at the time the problem occurs, or as soon as practical thereafter, either called or faxed to the Amity and include the numbers on the assembly's Amity's label with a detailed explanation of the difficulty in order for the matter to be appropriately evaluated and resolved.
8. Amity will not be held liable for damage incurred during shipment.
9. No responsibility shall be assumed for misuse or improper mounting, unreasonable use or abuse of the Product and or failure to provide or use improper maintenance, failure to follow written installation and use in instruction or any use other than the customary designed use.

THE REMEDIES PROVIDED IN THE ABOVE EXPRESS LIMITED WARRANTY AND ARE THE SOLE AND EXCLUSIVE REMEDIES AVAILABLE. NO OTHER EXPRESS WARRANTIES ARE MADE. ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR

FITNESS FOR A PARTICULAR PURPOSE OR USE ARE LIMITED IN DURATION AS SET FORTH ABOVE. IN NO EVENT SHALL THE AMITY ASSUME OR BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

THE WITHIN DESCRIBED WARRANTY SHALL ONLY BE AFFORDED TO THE ORIGINAL PURCHASER OR FOR INCORPORATION INTO ANOTHER UNIT AND TO FIRST PURCHASER AS PART OF COMPLETED UNIT, HOWEVER, THE WARRANTY PERIOD OF TEN YEARS COMMENCES UPON INSTALLATION INTO FINAL ASSEMBLY WITH THE UNDERSTANDING IT IS INSTALLED WITHIN SIX MONTHS OF PURCHASE.

Dated: _____, 20____



R. H. SHEPPARD CO., INC.
101 Philadelphia St.
Hanover, PA 17331
Pierce Manufacturing Inc.
2600 American Drive
Appleton, WI 54912

LIMITED WARRANTY: The R. H. Sheppard Co. Inc., ("Sheppard") warrants all M110PKG1 and M110SAU1 steering gears manufactured and sold to Pierce Manufacturing Inc. ("Pierce") for application on Pierce TAK-4 equipped vehicles to be free from defects of workmanship and material under normal use and service for a period of thirty six months from the in service date of the vehicle to its original owner.

Vehicle applications where Sheppard product is used require an application approval before production build. If Pierce uses Sheppard product for any purpose or application which has not been approved by Sheppard in advance, including aftermarket devices (defined as a device added to the steering system directly or indirectly affecting the performance or operation of the Sheppard product in its approved application) not tested and approved by Sheppard this limited warranty SHALL NOT APPLY AND SHALL BE VOID. SHEPPARD MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED. SHEPPARD EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

SHEPPARD SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES OR FOR LOSS OR DAMAGE DIRECTLY OR INDIRECTLY ARISING FROM THE USE OF A PRODUCT. Pierce expressly acknowledges its obligation to inform all users (customers) of the above disclaimer.

CONDITIONS: Claims under this Limited Warranty may only be made by Pierce. In no event shall Sheppard be held liable for warranty charges by unauthorized persons. No allowance will be made for repairs or alterations, unless made with the written consent of Sheppard. Authorized Pierce dealers shall be the only authorized repair facility for Sheppard products applied to Pierce vehicles. Any warrantable repair made under this Limited Warranty must be made on or before 36 months of the in-service date for the Product to which the claim relates. Sheppard shall not be liable for claims made after such date. Sheppard product fitted to Pierce vehicles that are repaired at a repair facility other than an authorized Pierce dealer within the warranty period will be considered for payment under the guidelines of this agreement only by joint written consideration of Sheppard and Pierce warranty departments. It shall be the responsibility of the Pierce warranty department to notify Sheppard if and when this situation occurs. Sheppard will not be held responsible for damage to other steering components such as but not limited to pumps and reservoirs due to improper adjustment of steering gear relief plungers. Vehicle downtime and towing will not be considered under warranty.

REMEDIES: The sole and exclusive remedy of Pierce for Sheppard's breach of the foregoing warranty is limited to the return and repair or reimbursement as follows:

R. H. SHEPPARD CO., INC. WARRANTY
Pierce Manufacturing Inc.
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Warranty Support: In support of the Pierce dealer network, Sheppard will provide a toll-free "Hotline" service to assist in the diagnosis and troubleshooting of steering problems. The R. H. Sheppard Co., Inc. Field Service Department can be reached at 1-800-274-7437 for assistance. Sheppard will require that Pierce dealers contact this toll-free "Hotline" for approval before product is removed from a vehicle in a warranty situation. When contacted regarding a warranty situation, the Sheppard representative will provide an authorization number for removal of the product. This Returned Goods Authorization (RGA) number must be included in all warranty correspondence and attached to all returned goods.

Procedure: In the event of a warranty situation, the servicing dealer shall contact the Sheppard Hotline and receive an RGA number before replacing any steering gear. For M110PKG1 and M110SAU1 steering gear models, the dealer will first obtain an RGA number from Sheppard, and then order the replacement gear from Pierce. Replacement M110PKG1 and M110SAU1 steering gears shall be shipped from Pierce once those models are in full production. A warranty claim for both parts and labor will then be generated by the dealer and sent to Pierce. After reviewing the claim, Pierce will submit it to Sheppard for reimbursement.

Parts Reimbursement: Sheppard agrees to reimburse Pierce at Pierce's purchase price plus 30% mark-up for parts found to be defective within the warranty period. Parts being returned for warranty consideration shall be sent to the R. H. Sheppard Company, 447 E. Middle St., Hanover, PA 17331 ATTN: Warranty Dept. Sheppard's determination as to whether the part is covered by the foregoing warranty is final and conclusive. Sheppard requires the return of complete steering gears only. Individual seals replaced under warranty **should not** be returned unless specifically requested by Sheppard. All parts being returned for warranty consideration must be clearly tagged with all pertinent warranty information including, but not limited to (1) Returned Goods Authorization number (RGA); (2) claim number; (3) date in service; (4) date of failure; (5) mileage; (6) part number; (7) labor hours; (8) dealer labor rate and; (9) dollar amount claimed. Claims submitted without prior authorization are subject to rejection under this agreement.

Labor: Labor to repair Sheppard product found to be defective within the warranty period will be reimbursed at not more than 10 hours per vehicle. Labor shall be reimbursed at the rate of \$85.00 USD per hour for M110PGK1 and M110SAU1 steering gears.

Freight: Pierce will collect M110PGK1 and M110SAU1 warranty material at a designated collection point. Inbound freight to the Pierce collection point will be the responsibility of Pierce. All warranty material should be returned from the Pierce collection point to R. H. Sheppard Co. Freight Collect by a Sheppard-specified common carrier based on location of the Pierce collection point. Sheppard does not require the return of failed seals. Any freight charges incurred for the return of seals will be the responsibility of Pierce. Parts returned for warranty consideration without prior authorization are subject to rejection under this agreement and may be subject to a charge back of inbound freight charges. Parts rejected under this warranty will be returned to Pierce Freight Collect or scrapped by Sheppard at Pierce's discretion.

R. H. SHEPPARD CO., INC. WARRANTY
Pierce Manufacturing Inc.
Page 3

Outside Purchases: Pierce authorized dealers shall be the only outlet for repair, warranty service and parts for Sheppard products applied to Pierce vehicles. Sheppard will not be responsible for consumables such as hoses, belts, fluids, fittings or miscellaneous shop material that may be required for the repair of the product.

Warranty Documentation: Warranty credit memos will be issued monthly to the Pierce Warranty Department. Monthly credit memos will include (1) claim number; (2) part number; (3) parts reimbursement; (4) labor reimbursement; (5) any applicable Pierce reference number and; (6) reason for rejection or acceptance of the claim. Credit memos will be issued in U.S. funds. Debits for warranty claims will not be accepted under this agreement. Claim disposition will constitute the final and conclusive resolution of warranty claims.

Parts Retention: Sheppard will retain parts submitted for warranty consideration for a period of sixty (60) days for any material found to be rejected for warranty. Sheppard will notify Pierce within sixty (60) days of receipt of Sheppard's determination as to whether any such part is covered by this warranty. Warranty reimbursement will be issued within thirty days of receipt of material at Sheppard.

Good-Will Requests: Good-Will requests will be considered jointly between Sheppard and Pierce for equitable compensation.

RECALLS: Sheppard retains the right to review information regarding federal motor vehicle recall and /or product repair programs if Sheppard products fitted to Pierce vehicles are alleged to be non-compliant with federal motor vehicle safety standards. Sheppard retains the right to review any claims of product defect or non-compliance before participating in reimbursement of expenses incurred as a result of alleged non-compliance or defect of its products. Sheppard agrees to negotiate in good faith for the reimbursement of expenses incurred by Pierce for all administrative, material and labor cost and expense associated with any recall where Sheppard product is found to be defective or non-compliant with federal motor vehicle standards.

MISCELLANEOUS: This writing constitutes the full complete and final statement of Sheppard's limited warranty for M110PKG1 and M110SAU1 products sold to Pierce. All prior oral or written correspondence, test data, negotiations, representations, understandings and the like regarding products are merged in this writing and extinguished by it. This limited warranty may not be altered, amended extended or modified except by a writing signed by the President or Vice President of Sheppard. No employee, vendor, dealer, distributor or other representative of Sheppard has authority to make statements to extend, expand, alter or amend the terms of this Limited Warranty. Sheppard expressly disclaims any statements contrary to the Limited Warranty. Sheppard's failure at any time to enforce any of the terms and conditions stated herein shall not constitute a waiver of any provisions herein. This Limited Warranty shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania.

R. H. SHEPPARD CO., INC. WARRANTY
Pierce Manufacturing Inc.
Page 4

Any legal actions which may arise as a result of disputes, controversies or claims arising out of or related to this limited warranty shall be in such forum as Sheppard and Pierce shall agree, or, in the absence of agreement, in a court of appropriate jurisdiction other than in the county in which either party is located. This Limited Warranty shall not be assigned by Pierce.

COOPERATIVE EFFORT: Sheppard and Pierce agree to work cooperatively toward expanding this warranty coverage to a period of sixty months from the in service date. These cooperative efforts shall focus on examining the effects of increased heat generated by 2007 model engines and its impact on the entire power steering system.

AGREEMENT: This agreement is effective April 3, 2006 and may be modified by mutual agreement between Sheppard and Pierce of a signed amendment to be attached to the original Limited Warranty. There are no third party beneficiaries to this Limited Warranty. This warranty agreement applies to Pierce authorized dealers only. It does not encompass any special arrangements that Pierce may now have or that Pierce may enter into, with any other segments of the trucking industry. This warranty agreement does not apply to non-conforming product removed at Pierce assembly plants.

This Limited Warranty agreement between the R. H. Sheppard Co., Inc and Pierce Manufacturing Inc. may be terminated by either party with thirty days written notice prior to termination.

Signed at Pierce Manufacturing Inc., Appleton, WI this _____ day of _____, 2006.

R. H. SHEPPARD CO., INC.

PIERCE MANUFACTURING INC.

Authorized Signature

Authorized Signature

Title

Title



Fire and Rescue Apparatus

Ten (10) Year Material and Workmanship

Pierce 12V LED Strip Light

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	This limited warranty covers repairs to correct any defect related to materials or workmanship of the Pierce 12V LED strip lights installed on the apparatus occurring during the warranty period.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Ten (10) Year
Conditions and Exclusions: See Also Paragraphs 2 thru 4	This limited warranty does not apply to related wire harnesses, cables, and connectors, which are covered by the Pierce one (1) year basic apparatus limited warranty.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY.

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES.

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Five (5) Year Material and Workmanship - Transmission Oil Cooler Three (3) Year Collateral Damage Coverage

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The transmission cooler shall be free from component or structural failures caused by defects in material and/or workmanship. Collateral damage up to \$10,000 per occurrence is available for the first three (3) years.
Warranty Begins:	The date of delivery to the first retail purchaser.
Warranty Period Ends After:	Five (5) Years on Oil Cooler and three (3) years on collateral damage coverage
Conditions and Exclusions: See Also Paragraphs 2 thru 4	<p>This warranty does not cover repair due to accidents, misuse, and excessive vibration, flying debris, storage damage (freezing), negligence or modification. This warranty is void if any modification or repairs are performed without authorization. This also voids any future warranty.</p> <p>This warranty does not cover cost of maintenance or repairs due to lack of required maintenance services as recommended. Performance of the required maintenance and use of proper fluids are the responsibility of the owner.</p> <p>Towing is covered to the nearest distributor or authorized dealer only when necessary to prevent further damage to your transmission.</p> <p>Labor costs for the removal and reinstallation of goods may be covered when necessary to make repairs. Please contact your OEM for authorization.</p> <p>Replacement of cooler during the warranty period is limited to 100% of reasonable labor costs up to a maximum of \$700 to remove, replace, or repair the oil cooler.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



Fire and Rescue Apparatus

Three (3) Year Material and Workmanship Meritor Wabco ABS Brake System Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The Meritor Wabco ABS brake system shall be covered by Meritor Wabco as indicated in the attached Meritor Wabco warranty coverage description
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Three (3) Year
Conditions and Exclusions: See Also Paragraphs 2 thru 4	The exclusions listed in the attached Meritor Wabco warranty description shall apply.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.

MERITOR® COMMERCIAL VEHICLE SYSTEMS



**WARRANTY / MODEL
YEAR 2013 VEHICLES**



MERITOR®

WARRANTY INFORMATION CONTENTS

Effective Model Year 2013 Vehicles

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How to Read Warranty Coverage

Number of Years	Mileage (in thousands) Unl=Unlimited	P=Parts Only P&L=Parts & Labor
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Models or components that are approved for use by Meritor's vocational guidelines contained in Meritor Publication TP-9441 for axles, SP-8320 for trailer axles, which are not specifically listed, are warranted for one year, unlimited miles, parts only (1/Unl/P).

HEAVY SERVICE WARRANTY INFORMATION

HEAVY SERVICE VEHICLES

- Airport Rescue Fire (ARF)
- Airport Shuttle
- Asphalt Truck
- Block Truck
- Bottom Dump Trailer Combination
- Cementing Vehicle
- City Bus
- Commercial Pick-Up
- Concrete Pumper
- Construction Material Hauler
- Crash Fire Rescue (CFR)
- Mixer
- Demolition
- Drill Rig
- Dump
- Emergency Service
- Equipment Hauling
- Flatbed Trailer Hauler
- Flatbed Truck
- Fracturing Truck
- Front Loader
- Geophysical Exploration
- Hopper Trailer Combinations
- Landscaping Truck
- Liquid Waste Hauler
- Log Hauling
- Lowboy
- Michigan Special Gravel Trains
- Michigan Special Log Hauler
- Michigan Special Steel Hauler
- Michigan Special Waste Vehicle
- Municipal Dump
- Rapid Intervention Vehicle (RIV)
- Rear Loader
- Recycling Truck
- Residential Pick-Up
- Rigging Truck
- Roll-Off
- Scrap Truck
- Semi-End Dump
- Sewer/Septic Vacuum
- Shuttle Bus
- Side Loader
- Snowplow/Snowblower
- Steel Hauling
- Tanker
- Tank Truck
- Tractors with Pole Trailers
- Tractor/Trailer with Jeeps
- Transfer Dump
- Transfer Vehicle
- Transit Bus
- Trolley
- Utility Truck
- Winch Truck

HEAVY SERVICE TYPICALLY IS

- Moderate mileage operation (less than 60,000 miles per year)
- On/Off road vocations (10% or more off-road)
- Moderate to frequent stops/starts (up to 10 stops per mile)

Coverage under Meritor's warranty requires that the application of products be properly approved pursuant to OEM, Meritor, Meritor WABCO, and ZF engineering approvals. Refer to TP-9441 for axles, SP-8320 for trailer axles, and/or contact Meritor regarding specific application approval questions on any product line.

FRONT DRIVE/NON-DRIVE STEER AXLES – 2/UNL/P&L

FD-965	FG-941	MFS-6-162B	MFS-10-143A-N	MFS-16-122A-N	MX-16-120
FF-941	FG-943	MFS-6-162C	MFS-10-144A-N	MFS-16-143A-N	MX-17-140
FF-942	FH-941	MFS-7-113C-N	MFS-12-143A-N	RF-16-145	MX-19-140
FF-943	FH-945	MFS-7-153C-N	MFS-12-144A-N	MFS-18-133A-N	MX-21-140
FF-944	FH-946	MFS-7-163C-N	MFS-12-155	MFS-20-133A-N	MX-21-160
FF-946	FL-941	MFS-8-113B-N	MFS-13-143A-N	RF-21-160	MX-23-160
FF-961	FL-943	MFS-8-153B-N	MFS-13-144A-N	MX-10-120	MX-23-810
FF-966	MFS-6-151A-N	MFS-8-163B-N	MFS-13-155	MX-12-120	
FF-967	MFS-6-153B	MFS-10-122A	MFS-14-143A-N	MX-14-120	

CLUTCHES

15.5" HD Clutch ¹	1/100/P&L
15.5" TwinXTend	1/100/P&L
17" FreedomLine Clutch	1/100/P&L

¹ Products with an in-service date prior to 11/01/02 warranted by Meritor Clutch Company.

DRIVELINES – 1/UNL/P&L

RPL	92N	RN	MXL
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REAR DRIVE SINGLE AXLES – 2/UNL/P&L

MS-10-113	RC-23-160	MS-26-616
RS-13-120	RH-23-160	RS-26-185/380
RS-15-120	RS-23-160	MS-30-616
MS-17-14X	RS-23-160	RH-30-185
RS-17-144/145/A	RC-23-161	RS-30-185/380
MS-19-14X	RH-23-161	MS-35-380
RS-19-144	RS-23-161	RS-38-380
MS-21-114	RS-23-186/380	RC-25-160
MS-21-14X	RC-23-162	RC-26-633
RS-21-145	RC-23-165	MT-58-616
RS-21-145/A	RS-24-160	71162
RS-21-160	RS-25-160	71163
RC-22-145	RH-26-185	

OFF-HIGHWAY SERVICE WARRANTY INFORMATION

INDUSTRIAL AND OFF-HIGHWAY SERVICE VEHICLES

- Load-On/Load-Off
- Port Tractor
- Rail Yard Spotter
- Roll-On/Roll-Off
- Stevedoring Tractor
- Trailer Spotter
- Yard Jockey
- All-Terrain Crane
- Rough Terrain Crane
- Forestry
- Material Handling
- Specialized Heavy Haul
- Specialized Mining
- Excavator
- Compactor
- Fertilizer Spreader
- Snow Blower
- Mining
- Rail Car Mover
- Loader
- Tow Tractor
- Pushback Tractor

INDUSTRIAL AND OFF-HIGHWAY SERVICE TYPICALLY IS

- Low mileage operation
- Low speed vehicle speed restriction
- Vehicles are **not** typically licensed for highway use
- Six (6) starts/stops per mile (typical)

Coverage under Meritor's warranty requires that the application of products be properly approved pursuant to OEM, Meritor, Meritor WABCO, and ZF engineering approvals. Refer to TP-9441 for axles and/or contact Meritor regarding specific application approval questions on any product line.

DRIVE STEER AXLES – 1/UNL/P

MOR	MOX	MOC
-----	-----	-----

FRONT NON-DRIVE STEER AXLES – 1/UNL/P

FF - 941	FL - 943	MFS-16-143A-N
FF - 943	MFS-12-143A-N	MFS-18-133A-N
FF - 961	MFS-12-144A-N	MFS-20-133A-N
FF - 966	MFS-13-143A-N	MON-ZO FAMILY
FG - 941	MFS-13-144A-N	
FG - 943	MFS-14-143A-N	
FL - 941	MFS-16-122A-N	

PLANETARY AXLES – 1/UNL/P

MOR	MOX	MOC	MOT
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REAR DRIVE SINGLE AXLES – 1/UNL/P

RS-23-186	MS-30-616	MS-35-380
RS-23-380	RS-30-185	
RS-24-160	RS-30-380	

DRIVELINES – 1/UNL/P

RPL	RN	MXL
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REAR DRIVE TANDEM AXLES – 1/UNL/P

MT-44-14X/P	MT-70-380	RT-46-164EH/P
MT-52-616	RT-44-145/P	RT-50-160/P
MT-58-616	RT-46-160/P	

BRAKE COMPONENTS

Cam P	3/Unl/P
Cam Q Plus™	3/Unl/P&L
ASA	3/Unl/P
Hubs/Cast Drums and Other Wheel-end Components	1/Unl/P
Hydraulic Disc Brakes	1/Unl/P
All Other Brakes	1/Unl/P
LX500 Feature ¹	1/Unl/P

¹ Includes: bushing, seal, cam and ASA.

² Based on stamped wear diameter max.

MERITOR WABCO COMPONENTS¹

ABS (Anti-Lock Braking System) Air/Hydraulic	3/300/P&L
Air Dryers (ALL)	1/100/P&L
Leveling Valves	1/Unl/P&L
Air Brake Valves	1/100/P
Clutch Controls	2/200/P&L
Air Compressors ²	1/100/P&L
Actuator	1/100/P&L

¹ Warranted by Meritor WABCO Vehicle Control Systems.

² WABCO compressors installed on Cummins, Mercedes, and DDC engines are not warranted or serviced by Meritor WABCO. Please contact your respective dealer/distributor of those engines for warranty and servicing.

TERMS AND CONDITIONS

COVERAGE EXCLUSIONS:

Product Description

All

The cost of any repairs, replacements or adjustments to a covered component (1) associated with noise; (2) resulting from the use or installation of non-genuine Meritor components or materials; (3) due to vibration associated with improper operation or misapplication of drivetrain components; and (4) damage resulting from corrosion.

Front Axles

King Pin Bushings.

Rear Axles

Self-contained traction equalizers and oil filters. The use of NoSPIN differentials will result in the exclusion of axle shafts from warranty considerations. NoSPIN is a product of Eaton.

Clutch

Friction face and mating surface of center and pressure plate, wear pads and clutch brake.

ASA

Boot and bushing. Bent, broken, over-torqued, missing or otherwise damaged pawl assemblies.

ABS, Electronic Stability Control (ESC), Roll Stability Control (RSC) and OnGuard

Cut, broken, chaffed or otherwise damaged cable wires. Damaged sensors from removal when seized in block, or sensor adjustments/alignments. Valve failures due to contamination in air system. E.C.U. failures due to excessive over-voltage conditions.

Air Dryers

Mounting brackets (see vehicle OEM). Desiccant cartridge housing only.

Air System Components

Gladhand seals, dash valve knobs, valve actuation handles, treadles, pedals. Water and other contamination damage that is due to the use of a non-genuine air dryer cartridge will not be covered.

Cam Brake

Brake lining wear and brake shoe "rust-jacking."

Disc Brake

Pad wear, rotor wear.

COVERAGE LIMITATIONS:

Product Description

All

Any claim beyond 60 days from date of repair will not be accepted or honored under this warranty program.

Front Axles

Tie rod and tie rod ends limited to 3-year/300,000-mile or published vocational coverage, whichever is less. Wheel seals, gaskets and wheel bearings are covered for 1 year/unlimited miles if the wheel end equipment is supplied and assembled by Meritor.

Rear Axles

Pinion and through shaft seals limited to 3-year/300,000-mile or published vocational coverage, whichever is less, if yoke is installed by Meritor. If yoke is not installed by Meritor, then Meritor does not warrant pinion seals. Wheel seals, gaskets and wheel bearings are covered for 1 year/unlimited miles if the wheel end equipment is supplied and assembled by Meritor.

Rear Axles

The Meritor® breather part number A-2297-C-8765 with A-3196-J-1336 hose must be used for eligibility of any potential warranty consideration relating to contamination and/or loss of lube in axles.

Cam Brake

Limited to bracket, brake spider and camshaft structural integrity.

X30

Wearable life is up to the discard diameter of the drum.

Disc Brake

Warranty coverage for boots, seals, bushings and pins is 2/200/P. Warranty coverage for pads is 1/100/P.

Warranty coverage on vehicles with 1,850 lb-ft engine torque and over may be reduced on individual drivetrain components. Contact your Meritor representative for specific details.

TERMS AND CONDITIONS

(1) What is Covered by this Commercial Warranty?

Meritor Inc. warrants to the owner ("Owner") that the components listed in this publication, which have been installed by an Original Equipment Manufacturer ("OEM") as original equipment in vehicles licensed for on-highway use, will be free from defects in material and workmanship. This warranty coverage begins only after the expiration of the OEM's vehicle warranty for the applicable covered components. Warranty coverage ends at the expiration of the applicable time period from the date of vehicle purchase by the first Owner, or, the applicable mileage limitation, whichever occurs first. Duration of coverage varies by component and vocation as detailed elsewhere in this warranty statement.

Some components are warranted for parts only and the Owner must pay any labor costs associated with the repair or replacement of the component. Other components are warranted for both parts and reasonable labor to repair or replace the subject component. Components (whether new, used or remanufactured) installed as replacements under this warranty are warranted only for the remainder of the original period of time or mileage under the original warranty.

For certain components, coverage requires the use of specific extended drain interval or synthetic lubricants. For further information about lubrication and maintenance, see Meritor publication Maintenance Manual Number I and the applicable Meritor maintenance manual for the product in question. Other conditions and limitations applicable to this warranty are detailed below.

(2) Designation of Vocational Use Required.

To obtain warranty coverage, each Owner must notify Meritor through the OEM new truck and/or trailer dealer of the intended vocational use of the vehicle into which the Meritor components have been incorporated prior to the vehicle in-service date. This notification may be accomplished by registering the vehicle through your OEM new truck and/or trailer dealer or with Meritor directly. Failure to notify Meritor of (I) the intended vocational use of the vehicle or (II) a change in vocational use from that which was originally designated, will result in the application of a one year, unlimited mileage, parts only warranty (1/Unl/P) from the initial in-service date.

A second Owner and each subsequent Owner must also notify Meritor as to the intended vocational use of the vehicle. This notification can be sent directly to Meritor or through the OEM new truck and/or trailer dealer. The duration and mileage coverage of this warranty cannot exceed the coverage extended to the first Owner after his or her initial designation of vocational use.

Coverage under Meritor's warranty requires that the application of products be properly approved pursuant to OEM, Meritor, Meritor-WABCO, and ZF engineering approvals. Refer to TP-9441 for axles, SP-8320 for trailer axles, and/or contact Meritor regarding specific application approval questions on any product line.

(3) What is the Cost of this Warranty?

There is no charge to the Owner for this warranty.

(4) What is not Covered by this Warranty?

This warranty does not cover normal wear and tear; nor does it cover a component that fails, malfunctions or is damaged as a result of (I) improper installation, adjustment, repair or modification (including the use of unauthorized attachments or changes or modification in the vehicle's configuration, usage, or vocation from that which was originally approved by Meritor), (II) accident, natural disaster, abuse, or improper use (including loading beyond the specified maximum vehicle weight or altering engine power settings to exceed the transmission, axle, driveline, and/or clutch torque capacity), or (III) improper or insufficient maintenance (including deviation from approved lubricants, change intervals, or lube levels). This warranty does not cover any component or part that is not sold by Meritor. For vehicles that operate full or part time outside of the United States and Canada, a one year, unlimited mileage, parts only warranty (1/Unl/P) will apply.

(5) Remedy.

The exclusive remedy under this warranty shall be the repair or replacement of the defective component at Meritor's option. Meritor reserves the right to require that all applicable failed materials are available and/or returned to Meritor for review and evaluation.

(6) Disclaimer of Warranty.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESSED, IMPLIED OR STATUTORY INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.

(7) Limitation of Remedies.

In no event shall Meritor be liable for special, incidental, indirect, or consequential damages of any kind or under any legal theory, including, but not limited to, towing, downtime, lost productivity, cargo damage, taxes, or any other losses or costs resulting from a defective covered component.

(8) To Obtain Service.

If the Owner discovers within the applicable coverage period a defect in material or workmanship, the Owner must promptly give notice to either Meritor or the dealer from which the vehicle was purchased. To obtain service, the vehicle must be taken to any participating OEM new truck and/or trailer dealer or authorized Meritor service location. The dealer will inspect the vehicle and contact Meritor for an evaluation of the claim. When authorized by Meritor, the dealer will repair or replace during the term of this warranty any defective Meritor component covered by this warranty.

(9) Entire Agreement.

This is the entire agreement between Meritor and the Owner about warranty and no Meritor employee or dealer is authorized to make any additional warranty on behalf of Meritor. This agreement allocates the responsibilities for component failure between Meritor and the Owner.



Meritor Heavy Vehicle Systems, LLC

2135 West Maple Road
Troy, Michigan 48084 USA

For more information:
866-OnTrac1 (866-668-7221)
meritor.com

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Fire and Rescue Apparatus

Three (3) Year Material and Workmanship Velocity and Impel Custom Chassis

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Portions of the apparatus manufactured by Pierce shall be free from defects in material and workmanship
Warranty Begins:	The date the apparatus is placed in service, or 60 days from the original buyer invoice date, whichever comes first.
Warranty Period Ends After:	Three (3) Years, or 30,000 Miles, or 5000 Engine Hours
Conditions and Exclusions: See Also Paragraphs 2 thru 4	This limited warranty applies, where applicable, to Goldstar lamination, defroster heater coil and motor blower assembly (excluding the FET PWM module), heater, air conditioning condenser coil and fan/motor assembly, air conditioning evaporator coil and motor blower assembly (excluding the drain pan pump and thermostat), under seat heaters coil and motor blower assembly (excluding the FET PWM module), HVAC electronic switches, HVAC hoses and hard lines, heater water valve, Pierce PS6 seat frames and hardware, Pierce One-Eleven mirrors, Pierce hands-free scba holder, cracking or color loss of roto-molded components, Meritor rear axle, Wabco ABS system, cab door handles, Standen spring suspension components, and the gauge instrument cluster.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.



MANUFACTURER'S LIMITED WARRANTY - HYDRAULIC GENERATORS

FIRE & EMERGENCY VOCATION

Harrison Hydra-Gen® (Seller) extends to the original purchaser (Buyer) of goods for use (whether it be an OEM, dealer, re-seller, or end-user) the following warranty covering the Harrison Hydra-Gen® Generator System, subject to the qualifications indicated. Harrison Hydra-Gen® Generator Systems shall consist of a Harrison generator tray assembly and its' components, a Harrison hydraulic pump assembly, and a Harrison supplied meter assembly; unless otherwise specified in below guidelines.

Harrison Hydra-Gen® warrants the original purchaser that the Generator System manufactured or supplied by Harrison Hydra-Gen® will be free from defects in materials and workmanship, provided such goods are:

1. Installed, operated and maintained in accordance with the Harrison Hydra-Gen® owner's manual, and/or written installation addendums.
2. Each new application has been reviewed and approved by the Harrison Hydra-Gen® Application Engineering Group.

PERIOD OF WARRANTY

*Six (6) years or 1000 hours of usage, whichever comes first, from the date the product is shipped from Harrison to the Installer.

***The END USER must complete and return to Harrison Hydra-Gen® the Harrison Hydra-Gen® Warranty Registration Card, Form WR-1, provided in the generator manual and provided online @ www.harrisonhydragen.com, within 45 days of delivery.**

Warranty includes all parts and labor. In addition, maintenance items that are contaminated or damaged by a proven warrantable failure are covered in years 1-2, and Labor time up to 4 hours, travel time up to 2.5 hours, and mileage up to 100 miles for warranty related repairs are covered in years 1-2.

Repair or replacement parts are warranted for ninety (90) days from date of purchase, excluding labor and travel expenses. Any part repaired or replaced during the warranty period assumes the remainder of the warranty or ninety (90) days, whichever is greater.

Only components supplied by Harrison Hydra-Gen® are covered under this warranty.



There is no other express warranty. Implied warranties, including merchantability and fitness for a particular purpose, are limited to periods set forth above and to the extent permitted by law. Any and all implied warranties are excluded. In no event is Harrison Hydra-Gen® liable for incidental or consequential damages.

The Buyer (OEM, dealer, re-seller, or end-user) must notify Harrison Hydra-Gen®, an Authorized Distributor, or a designated Harrison Hydra-Gen® Service Representative, **in writing**, within thirty (30) calendar days after goods or parts failed to meet this warranty.

The sole liability of Harrison Hydra-Gen® and the Buyer's sole remedy for a failure of goods under this warranty and for any and all other claims arising out of the purchase and use of the goods, including negligence on the part of the manufacturer, shall be limited to the repair or replacement of the product, at the option of Harrison Hydra-Gen®, of the parts that do not conform to this warranty, provided that the product or parts are returned to the Harrison Hydra-Gen® manufacturing facility.

A Returned Goods Authorization (RGA) is required for all products and parts being returned, and may be requested by phone, fax, email, or mail.

Failure to make timely delivery to Harrison Hydra-Gen® of the goods claimed to be defective shall void any warranty.

Unless previous written agreements have been made between the Buyer and Harrison Hydra-Gen®, the Buyer shall be responsible for all freight and shipping charges in connection with the delivery of the goods claimed to be defective, to Harrison Hydra-Gen® at its manufacturing facility, and the return of repaired or replacement goods to the Buyer.

If Harrison Hydra-Gen® determines that no warranty coverage is available for goods claimed to be defective, whether determination is based on the warranty being voided, the product failure being due to a cause not covered by the warranty, the failure to make a timely and proper warranty claim, or otherwise, the Buyer shall have the option of either:

1. Having the goods not repaired and returned to the Buyer, freight collect.
2. Having the goods repaired, If Harrison Hydra-Gen® determines that the product is repairable, and returned to the Buyer, freight collect. The Buyer will be responsible for all costs associated with the repair and testing of the goods and shall authorize Harrison Hydra-Gen®, in writing, to have the goods repaired and tested by Harrison Hydra-Gen®.

The owner is obligated to operate and maintain the goods in accordance with the recommendations published by Harrison Hydra-Gen® in the owner's manual. The owner is



responsible for the costs associated with such maintenance and any adjustments that may be required.

This warranty shall not apply to:

1. Damages or defects caused by normal wear, accident, misuse, abuse, abnormal operating conditions, negligence, corrosion, accident causes, or attributable to written specifications or instructions furnished by the installer.
2. Damages or defects caused by improper maintenance in accordance with the Harrison Hydra-Gen® product manuals and operating guidelines.
3. Damages caused by operator error.
4. Damages or defects caused by improper installation.
5. Damages or defects caused by inadequate water drainage provided by the installer in the area where the generator is installed or stored.
6. Damages or defects caused by inadequate air flow space or ventilation provided by the installer in the area where the generator is installed.
7. Any product or part altered or modified by the installer or service facility without written prior consent by Harrison Hydra-Gen®.
8. Cost of normal maintenance, adjustments, installation or start-up.
9. Normal wear items and components needing periodic maintenance such as rubber hoses and filters.
10. Excessive labor due to components being concealed in vehicle as a result of installation.
11. Water, road debris, excessive dirt, salt, abrasive particles, or large foreign objects found in the generator.
12. Telephone or other communications expense.
13. Paint, hydraulic fluid, and interconnecting hoses (internal or external to system assemblies).

This warranty gives you specific legal rights, and you may also have other rights that may vary from state to state or province to province.

No person is authorized to give any other warranties or to assume any other liabilities behalf of Harrison Hydra-Gen®, unless made or assumed in writing by an officer of Harrison Hydra-Gen®.

Contact Harrison Hydra-Gen® for questions regarding your warranty rights and responsibilities at (281) 807-4420; or visit our website at www.harrisonhydragen.com.

NOTE: Please refer to the **MANUFACTURER'S LIMITED WARRANTY; IHT SYSTEMS** for warranty guidelines specific to the IHT system.



Fire and Rescue Apparatus

Two (2) Year Material and Workmanship

Meritor Axles

Limited Warranty

1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The Meritor axle shall be covered by Meritor as indicated in the attached Meritor warranty coverage description
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Two (2) Year
Conditions and Exclusions: See Also Paragraphs 2 thru 4	The exclusions listed in the attached Meritor warranty description shall apply.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.

MERITOR® COMMERCIAL VEHICLE SYSTEMS

WARRANTY/MODEL YEAR 2018 VEHICLES



MERITOR





WARRANTY INFORMATION CONTENTS

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How to Read Warranty Coverage

Number of Years	Mileage (in thousands) Unl=Unlimited	P=Parts Only P&L=Parts & Labor
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Notice:

Models or components that are approved for use by Meritor’s vocational guidelines contained in Meritor Publication TP-9441 for axles, SP-8320 for trailer axles, TP-12126 for drivelines, which are not specifically listed, are warranted for one year, unlimited miles, parts only (1/Unl/P).

Products purchased on an incomplete vehicle (glider) are limited to one year, unlimited miles parts only (1/Unl/P).

Advantage Program

Purchasing additional coverage on select components will continue to safeguard your investment against major repair costs after the initial base coverage expires. You can find out more about the Advantage Program by visiting www.meritor.com or by contacting Meritor at 866-OnTrac1 (866-668-7221).



LINEHAUL WARRANTY INFORMATION

Linehaul Vehicles

- | | | | |
|------------------------|-------------------|--------------------|------------------------|
| ■ Auto Hauler | ■ Flatbed | ■ Livestock Hauler | ■ Refrigerated Freight |
| ■ Bulk Hauler | ■ General Freight | ■ Moving Van | ■ Tanker |
| ■ Chip Hauler (Truck)* | ■ Grain Hauler | ■ Pipe Hauler | ■ Triples |
| ■ Doubles | | | |

* Chip Hauler vehicles require specific axle models listed below and Linehaul condition to be eligible for Linehaul warranty consideration.

Linehaul Typically Is

- High mileage operation (over 60,000 miles/year)
- Well maintained major highways of concrete or asphalt construction
- Greater than 30 miles between starting and stopping

Coverage under Meritor's warranty require that the application of products be properly approved pursuant to OEM and Meritor approvals. Refer to TP-9441 for axles, SP-8320 for trailer axles, TP-12126 for drivelines, and/or contact Meritor regarding specific application approval questions on any product line.

Front Non-Drive Steer Axles – 5/750/P&L

FD-965	FF-966	MFS-10-144A-N	MFS-12-132C-N	MFS-13-122C-N	MFS-14-143A-N
FF-941	FF-967	MFS-12-122A-N	MFS-12-143A-N	MFS-13-132B-N	
FF-942	FG-941	MFS-12-122B-N	MFS-12E-143A-N	MFS-13-132C-N	
FF-943	FG-943	MFS-12-122C-N	MFS-12-144A-N	MFS-13-143A-N	
FF-944	MFS-10-122A	MFS-12E-122A-N	MFS-13-122A-N	MFS-13-144A-N	
FF-961	MFS-10-143A-N	MFS-12-132B-N	MFS-13-122B-N	MFS-14-122A-N	

Rear Drive Single Axles – 5/750/P&L

RS-19-144/145/A	RS-21-160
MS-19-14X	RS-23-160
MS-21-144	RS-23-161
RS-21-145	RS-23-186

Rear Drive Tandem/Tridem Axles – 5/750/P&L

RT-34-144/P/A	MA-40-165	MT-40-943
RT-40-145/A	MA-40-175	MT-40-943-SP
RT-40-160/P ^{1,2}	MT-34-14X/P	RZ-166 ²
RT-46-160/P ^{1,2}	MT-40-14X/P	RZ-188
RT-46-164EH/P ^{1,2}	MT-40-14X/P	
RT-50-160/P ^{1,2}	MT-40-144/P	

Drivelines

RPL	5/500/P, 1/Unl/P&L
MXL	3/350/P, 1/Unl/P&L
155N	1/Unl/P
92N	1/Unl/P

¹ These models required for Chip Hauler and Linehaul warranty consideration.
² Each vehicle must have a Request for Application Recommendation (RAR) approved by Meritor prior to vehicle build. All RARs must identify the chassis number or VIN. Refer to Product Information Letter #303 and #396 for further details.



LINEHAUL WARRANTY INFORMATION

Brake Components

Cam Q Series Trailer Brakes	5/500/P, 1/100/L
LX500 Feature ¹	5/750/P&L
Q+ Drum Brake™	5/500/P, 1/Unl/P&L
ASA	5/500/P, 1/Unl/P&L
Hubs/Cast Drums and Other Wheel-end Components	1/Unl/P
Hydraulic Disc Brakes	1/Unl/P
All Other Brakes	1/Unl/P
STEELite X30 Drum Brake™ ²	12-Years or Wearable Life/P
EX+ Air Disc Brake™	5/500/P, 1/Unl/L

¹ Includes: bushing, seal, cam, ASA lubrication and wear coverage of 3/500/P&L.

² Based on stamped wear diameter max.

Trailer Axles

Beam and Brackets	5/500/P, 1/100/L
Wheel End Systems ¹	
Standard System ²	1/100/P&L
PreSet by Meritor ³	5/500/P&L
AxlePak5 ⁴	5P/L
AxlePak7 ⁵	7P/L

¹ Includes hub, wheel seals and wheel bearings—all systems require annual inspections and proper documentation to ensure full coverage.

² When installed by Meritor.

³ Requires approved hubcap stating PreSet by Meritor on hubcap face.

⁴ When specified with AxlePak5 wheel end system, coverage on MTIS thru-tee and stator is 5/500P, 3/500L.

⁵ When specified with AxlePak7 wheel end system, coverage on MTIS thru-tee and stator is 7/750P, 3/500L.

(For brake components and ABS coverage, refer to appropriate product warranties.)

TAG/Pusher Axles¹

TQ, TQD, TR, TRD Beam and Brackets	5/750/P&L
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¹ For brake components and ABS Coverage, refer to appropriate product warranties.

Meritor Tire Inflation System by PSI

MTIS Components	3/500/P&L
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Trailer Air Suspension Systems

MPA38/40 (Tandem Axle Parallelogram) ¹	
Major Structural Components	5/500/P, 1/100/L
Curbing Damage Warranty ²	5/500/P, 1/100/L
Height Control Valve	1/100/P&L
Shock Absorbers	2/200/P&L
Air Springs	2/200/P, 1/100/L
Bushings	7/700/P, 5/500/L
PinLoc Air Controls	1/100/P&L
PinLoc Actuator	3/300/P&L
MPA20 (Single Axle Parallelogram)	
Major Structural Components	5/500/P, 1/100/L
Height Control Valve	1/100/P&L
Shock Absorbers	2/200/P&L
Air Springs	2/200/P, 1/100/L
Bushings	7/700/P, 5/500/L
MTA (Trailing Arm)	
Major Structural Components	5/500/P, 1/100/L
Height Control Valve	1/100/P&L
Shock Absorbers	2/200/P&L
Air Springs & Rebound Straps	2/200/P, 1/100/L
Bushings	5/500/P, 3/300/L

¹ Fastener torque coverage is limited to 2/Unl P&L when torqued by Meritor (For axle and ABS coverage, refer to appropriate product warranties.)

² "Curbing damage" is defined as deformation (bending, buckling, or breakage), caused by sudden impact with a curb or similar fixed object. Damage to the RideSentry slider box (the suspension sliding subframe, consisting of the frame rails, crossmembers, and central A-frame assembly), caused by accidental trailer impact with a curb or similar fixed object, is eligible for warranty coverage. Damage to other components or damage resulting from collision with another vehicle, rollover or fire is not covered under this provision. Warranty is not transferrable to another trailer VIN, and coverage does not apply if the trailer is deemed to be a total loss, scrapped, or otherwise not salvageable.



GENERAL SERVICE WARRANTY INFORMATION

General Service Vehicles

■ Aerial Ladder Truck	■ Front Engine Commercial Chassis	■ Municipal Truck	■ Refrigerated Freight
■ Aerial Platform	■ Front Engine Integral Coach	■ Newspaper Delivery	■ School Bus
■ Ambulance	■ General Freight	■ Pick-Up and Delivery	■ Stake Truck
■ Auto Hauler	■ Intercity Coach	■ Pipe Hauler	■ Tanker
■ Beverage Truck	■ Intermodal Chassis	■ Platform Auto Hauler	■ Tanker Truck
■ Chip Hauler	■ Livestock Hauler	■ Pumper	■ Tour Bus
■ Cross Country Coach	■ Meat Packer	■ Rear Engine Integral Coach	■ Wrecker
■ Flatbed	■ Moving Van	■ Recreational Vehicles	

General Service Typically Is

- Lower mileage operations (less than 60,000 miles/year)
- Generally, on-road service (less than 10% off-road)
- An average of three (3) miles between starting and stopping

Coverage under Meritor's warranty require that the application of products be properly approved pursuant to OEM and Meritor approvals. Refer to TP-9441 for axles, SP-8320 for trailer axles, TP-12126 for drivelines, and/or contact Meritor regarding specific application approval questions on any product line.

Front Drive/Non-Drive Steer Axles – 2/Unl/P&L

FD-965	FH-941	MFS-7-153C-N	MFS-12E-122A-N	MFS-13-122C-N	MFS-18-135A-N
FF-941	FH-946 ¹	MFS-7-163C-N	MFS-12-122B-N	MFS-13-132B-N	MFS-18-193A-N
FF-942	FL-941	MFS-8-113B-N	MFS-12-122C-N	MFS-13-132C-N	MFS-20-133A-N
FF-943	FL-943	MFS-8-143A-N	MFS-12-132B-N	MFS-13-143A-N	MFS-20-135A-N
FF-944	MFS-6-151A-N	MFS-8-153B-N	MFS-12-132C-N	MFS-13-144A-N	MFS-20H-193A-N
FF-946	MFS-6-153B-N	MFS-8-163B-N	MFS-12-143A-N	MFS-14-122A-N	MFS-22H-135A-N
FF-961	MFS-6-162B-N	MFS-10-122A	MFS-12-144A-N	MFS-14-143A-N	MFS-22H-193A-N
FF-966	MFS-6-153C-N	MFS-10-143A-N	MFS-12E-143A-N	MFS-16-122A-N	
FF-967	MFS-6-162C-N	MFS-10-144A-N	MFS-13-122A-N	MFS-16-143A-N	
FG-941	MFS-7-113C-N	MFS-12-122A-N	MFS-13-122B-N	MFS-18-133A-N	

¹ Can also be used with reduced steer angles in tag position in Coach Applications.

Rear Drive Single Axles – 2/Unl/P&L

MS-17-13X	MS-21-144	RC-23-162 ¹	MS-26-616	79163
MS-17-14X	MS-23-17X	RC-23-165 ¹	MS-26-616-SP	
MS-19-13X	RS-21-145/A	RS-23-160	RS-30-185	
MS-19-14X	RS-21-160	RS-23-161	MS-30-616	
RS-17-144/145/A	RC-22-145	RS-23-186	MS-30-616-SP	
RS-19-144/145/A	RC-22-145/A	RS-24-160	RS-35-380	
MS-21-13X	RC-23-160	RC-25-160	71162	
MS-21-14X	RC-23-161	RS-26-185	71163	

¹ 3/Unl/P&L if PreSet by Meritor.

Rear Drive Tandem – 3/Unl/P&L

RT-40-160/P	RT-46-164EH/P
RT-46-160/P	RT-50-160/P

Drivelines

RPL	4/400/P, 1/Unl/P&L
MXL	3/350/P, 1/Unl/P&L
155N	1/Unl/P
92N	1/Unl/P

Rear Drive Tandem/Tridem Axles – 2/Unl/P&L

MT-34-14X/P	MT-44-14X/P	MT-58-616
RT-34-144/P/A	RT-44-145/P	RT-58-185 ¹
MT-40-14X/P	RT-46-169	MT-70-380
MT-40-144/P	MT-52-616	RZ-166
RT-40-145/A	RT-52-185 ¹	RZ-188

¹ Each vehicle must have a Request for Application Recommendation (RAR) approved by Meritor prior to vehicle build. All RARs must identify the chassis number or VIN. Refer to Product Information Letter #303 and #396 for further details.



GENERAL SERVICE WARRANTY INFORMATION

Brake Components

Cam Q Series Trailer Brakes	3/Unl/P, 1/Unl/L
LX500 Feature ¹	3/Unl/P&L
Cam P ³	2/200/P
Cam	3/Unl/P
Q+ Drum Brake™	3/Unl/P&L
Q+ Drum Brake™ ³	2/200/P&L
ASA	3/Unl/P
ASA ³	2/200/P
Hubs/Cast Drums and Other Wheel-end Components	1/Unl/P
Hydraulic Disc Brakes	1/Unl/P
All Other Brakes	1/Unl/P
STEELite X30 Drum Brake™ ²	12-Years or Wearable Life/P
EX+ Air Disc Brake™	2/Unl/P&L

¹ Includes: bushing, seal, cam, ASA lubrication and wear coverage of 1/Unl/P.

² Based on stamped wear diameter max.

³ Applies to Tour Bus and Cross Country Coach only.

Trailer Axles

Beam and Brackets ¹	5/Unl/P, 1/Unl/L
Wheel End Systems ²	
Standard System ³	1/Unl/P&L
AxlePak5 ⁴	5P/L
AxlePak7 ⁵	7P/L

¹ 9000 Series is 3/Unl/P, 1/Unl/L

² Includes hub, wheel seals and wheel bearings—all systems require annual inspections and proper documentation to ensure full coverage.

³ When installed by Meritor.

⁴ When specified with AxlePak5 wheel end system, coverage on MTIS thru-tee and stator is 5/500P, 3/500L.

⁵ When specified with AxlePak7 wheel end system, coverage on MTIS thru-tee and stator is 7/750P, 3/500L.

(For brake components and ABS coverage, refer to appropriate product warranties.)

Chassis Axles (2000 Series/ChassiPak)

Beam & Brackets	6/Unl/P, 1/Unl/L
Wheel End Systems ¹	
Standard System	1/Unl/P&L
AxlePak7	7P/L
Beam and Brackets	7P/1L

¹ Includes hub, wheel seals and wheel bearings—all systems require annual inspections and proper documentation to ensure full coverage.

Trailer Air Suspension Systems

MPA38/40 (Tandem Axle Parallelogram) ¹	
Major Structural Components	5/Unl/P, 1/Unl/L
Curbing Damage Warranty ²	5/500/P, 1/100/L
Height Control Valve	1/Unl/P&L
Shock Absorbers	2/Unl/P&L
Air Springs	2/Unl/P, 1/Unl/L
Bushings	7/700/P, 5/500/L
PinLoc Air Controls	1/Unl/P&L
PinLoc Air Actuator	3/Unl/P&L
MPA20 (Single Axle Parallelogram)	
Major Structural Components	5/Unl/P, 1/Unl/L
Height Control Valve	1/Unl/P&L
Shock Absorbers	2/Unl/P&L
Air Springs	2/Unl/P, 1/Unl/L
Bushings	7/700/P, 5/500/L
MTA (Trailing Arm)	
Major Structural Components	5/Unl/P, 1/Unl/L
Height Control Valve	1/Unl/P&L
Shock Absorbers	2/Unl/P&L
Air Springs and Rebound Straps	2/Unl/P, 1/Unl/L
Bushings ³	5/Unl/P, 3/Unl/L

(For axle and ABS coverage, refer to appropriate product warranties.)

¹ Fastener torque coverage is limited to 2/Unl P&L when torqued by Meritor

² "Curbing damage" is defined as deformation (bending, buckling, or breakage), caused by sudden impact with a curb or similar fixed object. Damage to the RideSentry slider box (the suspension sliding subframe, consisting of the frame rails, crossmembers, and central A-frame assembly), caused by accidental trailer impact with a curb or similar fixed object, is eligible for warranty coverage. Damage to other components or damage resulting from collision with another vehicle, rollover or fire is not covered under this provision. Warranty is not transferrable to another trailer VIN, and coverage does not apply if the trailer is deemed to be a total loss, scrapped, or otherwise not salvageable.

³ Raw wood applications 3/Unl/P, 1/Unl/L

TAG/Pusher Axles

TQ, TQD, TR, TRD Beam and Brackets ¹	3/Unl/P, 1/Unl/L
MC12002, MC14002, MC16003, FH946	2/Unl/P&L

(For brake components and ABS coverage, refer to appropriate product warranties.)

¹ 3/UNL/P&L if sold with PreSet by Meritor.

Meritor® Tire Inflation System by PSI

MTIS Components	3/500/P&L
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HEAVY SERVICE WARRANTY INFORMATION

Heavy Service Vehicles

■ Airport Rescue Fire (ARF)	■ Drill Rig	■ Michigan Special Gravel Trains	■ Shuttle Bus
■ Airport Shuttle	■ Dump	■ Michigan Special Log Hauler	■ Side Loader
■ Asphalt Truck	■ Emergency Service	■ Michigan Special Steel Hauler	■ Snowplow/Snowblower
■ Block Truck	■ Equipment Hauling	■ Michigan Special Waste Vehicle	■ Steel Hauling
■ Bottom Dump Trailer	■ Flatbed Trailer Hauler	■ Municipal Dump	■ Tanker
■ Combination	■ Flatbed Truck	■ Rapid Intervention Vehicle (RIV)	■ Tank Truck
■ Cementing Vehicle	■ Fracturing Truck	■ Rear Loader (Refuse)	■ Tractors with Pole Trailers
■ City Bus	■ Front Loader	■ Recycling Truck	■ Tractor/Trailer with Jeeps
■ Commercial Pick-Up	■ Geophysical Exploration	■ Residential Pick-Up (Refuse)	■ Transfer Dump
■ Concrete Pumper	■ Hopper Trailer Combinations	■ Rigging Truck	■ Transfer Vehicle
■ Construction Material Hauler	■ Landscaping Truck	■ Roll-Off	■ Transit Bus
■ Crash Fire Rescue (CFR)	■ Liquid Waste Hauler	■ Scrap Truck	■ Trolley
■ Mixer	■ Log Hauling	■ Semi-End Dump	■ Utility Truck
■ Demolition	■ Lowboy	■ Sewer/Septic Vacuum	■ Winch Truck

Heavy Service Typically Is

- Moderate mileage operation (less than 60,000 miles per year)
- On/Off road vocations (10% or more off-road)
- Moderate to frequent stops/starts (up to 10 stops per mile)

Coverage under Meritor's warranty require that the application of products be properly approved pursuant to OEM and Meritor approvals. Refer to TP-9441 for axles, SP-8320 for trailer axles, TP-12126 for drivelines, and/or contact Meritor regarding specific application approval questions on any product line.

Front Drive/Non-Drive Steer Axles – 2/Unl/P&L

FD-965	FH-941	MFS-8-113B-N	MFS-12-132C-N	MFS-13-155	MFS-22H-135A-N	MX-17-140
FF-941	FH-946	MFS-8-153B-N	MFS-12-143A-N	MFS-14-122	MFS-22H-193A-N	MX-19-140
FF-942	FL-941	MFS-8-163B-N	MFS-12-144A-N	MFS-14-143A-N	RF-16-145	MX-21-140
FF-943	FL-943	MFS-10-122A	MFS-12-155	MFS-16-122A-N	RF-21-160	MX-21-160
FF-944	MFS-6-151A-N	MFS-10-143A-N	MFS-13-122	MFS-16-143A-N	MX-10-120	MX-23-160
FF-946	MFS-6-153B	MFS-10-144A-N	MFS-13-122B-N	MFS-18-133A-N	MX-10-120 EVO	MX-810
FF-961	MFS-6-162B	MFS-12-122	MFS-13-122C-N	MFS-18-135A-N	MX-12-120	
FF-966	MFS-6-162C	MFS-12-122B-N	MFS-13-132B-N	MFS-18-193A-N	MX-12-120 EVO	
FF-967	MFS-7-113C-N	MFS-12-122C-N	MFS-13-132C-N	MFS-20-133A-N	MX-14-120	
FG-941	MFS-7-153C-N	MFS-12E-122	MFS-13-143A-N	MFS-20-135A-N	MX-16-120	
FG-943	MFS-7-163C-N	MFS-12-132B-N	MFS-13-144A-N	MFS-20H-193A-N	MX-18-120	

Drivelines

RPL	3/Unl/P, 1/Unl/P&L
92N	1/Unl/P&L
MXL	1/Unl/P&L

Rear Drive Single Axles – 2/Unl/P&L

MS-17-14X	RS-23-160	MS-30-616-SP
RS-17-144/145/A	RC-23-161	RS-30-185/380
MS-19-14X	RS-23-161	MS-35-380
RS-19-144	RS-23-186/380	RS-38-380
MS-21-114	RC-23-162	RC-25-160
MS-21-14X	RC-23-165	RC-26-633
RS-21-145	RS-24-160	MT-58-616
RS-21-145/A	RS-25-160	MT-58-616-SP
RS-21-160	MS-26-616	71162
RC-22-145	MS-26-616-SP	71163
RC-23-160	RS-26-185/380	79163
RH-23-160	MS-30-616	



HEAVY SERVICE WARRANTY INFORMATION

Rear Drive Tandem/Tridem Axles – 2/Unl/P&L

MT-34-14X/P	RT-44-145/P	MT-58-616	RZ-166
RT-34-144/P/A	RT-46-169	MT-58-616-SP	RZ-188
MT-40-14X/P	MT-52-616	RT-58-185/380 ^{1,2}	
RT-40-145/A	MT-52-616-SP	RT-70-380	
MT-44-14X/P	RT-52-185/380 ^{1,2}	MT-70-380	

¹ Axle model designated will vary according to options and variations specified on these axles. Contact Meritor Axle Applications Engineering for details.

² Each vehicle must have a Request for Application Recommendation (RAR) approved by Meritor prior to vehicle build. All RARs must identify the chassis number or VIN. Refer to Product Information Letter #303 and #396 for further details.

Brake Components

Cam P	3/Unl/P
Cam P ³	2/100/P
Cam Cast Plus™	2/100/P&L
Q+ Drum Brake™	3/Unl/P&L
Q+ Drum Brake™ ²	2/100/P&L
ASA	3/Unl/P
ASA ²	2/100/P
Hubs/Cast Drums and Other Wheel-end Components	1/Unl/P
Hydraulic Disc Brakes	1/Unl/P
All Other Brakes	1/Unl/P
EX+ Air Disc Brake	2/100/P&L

¹ Based on stamped wear diameter max.

² Applies to City Bus, Trolley, Shuttle Bus and Airport Shuttle only.

³ Warranty for all non-Meritor ASAs supplied by Meritor for all Heavy Service vocations is 1/100/P.

Transfer Cases – 1/Unl/P

MTC-4208	MTC-4213	T-2119
MTC-4210	T-2111	

Rear Drive Tandem – 3/Unl/P&L

RT-40-160/P/A³

RT-46-160/P/A^{1,3}

RT-46-164EH/P/A^{2,3}

RT-50-160/P/A³

¹ U.S. only. Canadian warranty = 1/Unl/P for combination vehicles only.

² Axle model designated will vary according to options and variations specified on these axles. Contact Meritor Axle Applications Engineering for details.

³ Each vehicle must have a Request for Application Recommendation (RAR) approved by Meritor prior to vehicle build. All RARs must identify the chassis number or VIN. Refer to Product Information Letter #303 and #396 for further details.

Meritor Tire Inflation System by PSI

MTIS Components	3/500/P&L
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Trailer Air Suspension Systems

MTA (Trailing Arm)	
Major Structural Components ¹	5/Unl/P, 1/Unl/L
Height Control Valve	1/Unl/P&L
Shock Absorbers	2/Unl/P&L
Air Springs	2/Unl/P, 1/Unl/L
Bushings ¹	5/Unl/P, 3/Unl/L

¹ Raw wood applications 3/Unl/P, 1/Unl/L

(For axle and ABS coverage, refer to appropriate product warranties.)

Center Non-drive Axles – 2/Unl/P&L

MC26000
71063
79063

Trailer Axles

Beam and Brackets ¹	5/Unl/P, 1/Unl/L
Wheel End Systems ²	
Standard System ³	1/Unl/P&L

¹ 9000 Series is 3/Unl/P, 1/Unl/L.

² Includes hub, wheel seals and wheel bearings—all systems require annual inspections and proper documentation to ensure full coverage.

³ When installed by Meritor.

(For brake components and ABS coverage, refer to appropriate product warranties.)



OFF-HIGHWAY SERVICE WARRANTY INFORMATION

Industrial And Off-Highway Service Vehicles

- | | | | |
|-----------------------|--------------------------|-----------------------|--------------------|
| ■ Load-On/Load-Off | ■ Yard Jockey | ■ Specialized Mining | ■ Rail Car Mover |
| ■ Port Tractor | ■ All-Terrain Crane | ■ Excavator | ■ Loader |
| ■ Rail Yard Spotter | ■ Rough Terrain Crane | ■ Compactor | ■ Tow Tractor |
| ■ Roll-On/Roll-Off | ■ Forestry | ■ Fertilizer Spreader | ■ Pushback Tractor |
| ■ Stevedoring Tractor | ■ Material Handling | ■ Snow Blower | |
| ■ Trailer Spotter | ■ Specialized Heavy Haul | ■ Mining | |

Industrial And Off-Highway Service Typically Is

- Low mileage operation
- Low speed vehicle speed restriction
- Vehicles are **not** typically licensed for highway use
- Six (6) starts/stops per mile (typical)

Coverage under Meritor's warranty require that the application of products be properly approved pursuant to OEM and Meritor approvals. Refer to TP-9441 for axles, TP-12126 for drivelines, and/or contact Meritor regarding specific application approval questions on any product line.

Drive Steer Axles – 1/Unl/P

MOR MOX MOC

Front Non-Drive Steer Axles – 1/Unl/P

FF - 941	MFS-12-143A-N	MFS-18-135A-N
FF - 943	MFS-12-144A-N	MFS-18-193A-N
FF - 961	MFS-13-143A-N	MFS-20-133A-N
FF - 966	MFS-13-144A-N	MFS-20-135A-N
FG - 941	MFS-14-143A-N	MFS-20H-193A-N
FG - 943	MFS-16-122A-N	MFS-22H-135A-N
FL - 941	MFS-16-143A-N	MFS-22H-193A-N
FL - 943	MFS-18-133A-N	MON-ZO FAMILY

Planetary Axles – 1/Unl/P

MOR MOX MOC MOT

Rear Drive Single Axles – 1/Unl/P

RS-23-186	RS-24-160-SP	RS-30-185
RS-23-380	MS-30-616	RS-30-380
RS-24-160	MS-30-616-SP	MS-35-380

Drivelines – 1/Unl/P

RPL MXL

Rear Drive Tandem Axles – 2/Unl/P

MT-44-14X/P	MT-58-616	RT-44-145/P	RT-50-160/P
MT-52-616	MT-58-616-SP	RT-46-160/P	RZ-166
MT-52-616-SP	MT-70-380	RT-46-164EH/P	

Brake Components

Cam P	3/Unl/P
Q+ Drum Brake™	3/Unl/P&L
ASA	3/Unl/P
Hubs/Cast Drums and Other Wheel-end Components	1/Unl/P
Hydraulic Disc Brakes	1/Unl/P
All Other Brakes	1/Unl/P



TERMS AND CONDITIONS

Coverage Exclusions

Product Description

All

The cost of any repairs, replacements or adjustments to a covered component (1) associated with noise; (2) resulting from the use or installation of non-genuine Meritor components or materials; (3) due to vibration associated with improper operation or misapplication of drivetrain components; and (4) damage resulting from corrosion.

For axle assemblies supplied by Meritor with suspension and interface brackets designed and/or attached by non-Meritor parties, Meritor warranty coverage does not apply to the brackets, bracket attachment methods, and field issues caused by brackets or bracket attachments to any covered component unless specified in a separate OEM agreement.

Front Axles

King Pin Bushings.

Rear Axles

Self-contained traction equalizers and oil filters. The use of NoSPIN differentials will result in the exclusion of axle shafts from warranty considerations. NoSPIN is a product of Eaton.

ASA

Boot and bushing. Bent, broken, over-torqued, missing or otherwise damaged pawl assemblies.

Cam Brake

Brake lining wear and brake shoe “rust-jacking.”

Disc Brake

Pad wear, rotor wear.

Coverage Limitations

Product Description

All

Any claim beyond 60 days from date of repair will not be accepted or honored under this warranty program. Products purchased on an incomplete vehicle (glider) are limited to one year, unlimited miles parts only (1/Unl/P).

Front Axles

Tie rod and tie rod ends limited to 3-year/300,000-mile or published vocational coverage, whichever is less. Wheel seals, gaskets and wheel bearings are covered for 1 year/unlimited miles if the wheel end equipment is supplied and assembled by Meritor.

Rear Axles

Pinion and through shaft seals limited to 3-year/300,000-mile or published vocational coverage, whichever is less, if yoke is installed by Meritor. If yoke is not installed by Meritor, then Meritor does not warrant pinion seals. Wheel seals, gaskets and wheel bearings are covered for 1 year/unlimited miles if the wheel end equipment is supplied and assembled by Meritor.

Rear Axles

The Meritor® breather part number A-2297-C-8765 with A-3196-J-1336 hose must be used for eligibility of any potential warranty consideration relating to contamination and/or loss of lube in axles.

Cam Brake

Limited to bracket, brake spider and camshaft structural integrity.

STEELite X30

Wearable life is up to the discard diameter of the drum.

Disc Brake

Warranty coverage for boots, seals, bushings and pins is 2/200/P. Warranty coverage for pads is 1/100/P.

Warranty coverage on vehicles with 1,850 lb-ft engine torque and over may be reduced on individual drivetrain components. Contact your Meritor representative for specific details.

TERMS AND CONDITIONS

(1) What is Covered by this Commercial Warranty?

Meritor Inc. warrants to the owner ("Owner") that the components listed in this publication, which have been installed by an Original Equipment Manufacturer ("OEM") as original equipment in vehicles licensed for on-highway use, will be free from defects in material and workmanship. This warranty coverage begins only after the expiration of the OEM's vehicle warranty for the applicable covered components. Warranty coverage ends at the expiration of the applicable time period from the date of vehicle purchase by the first Owner, or, the applicable mileage limitation, whichever occurs first. Duration of coverage varies by component and vocation as detailed elsewhere in this warranty statement.

Some components are warranted for parts only and the Owner must pay any labor costs associated with the repair or replacement of the component. Other components are warranted for both parts and reasonable labor to repair or replace the subject component. Components (whether new, used or remanufactured) installed as replacements under this warranty are warranted only for the remainder of the original period of time or mileage under the original warranty.

For certain components, coverage requires the use of specific extended drain interval or synthetic lubricants. For further information about lubrication and maintenance, see Meritor publication Maintenance Manual Number I and the applicable Meritor maintenance manual for the product in question. Other conditions and limitations applicable to this warranty are detailed below.

(2) Designation of Vocational Use Required.

To obtain warranty coverage, each Owner must notify Meritor through the OEM new truck and/or trailer dealer of the intended vocational use of the vehicle into which the Meritor components have been incorporated prior to the vehicle in-service date. This notification may be accomplished by registering the vehicle through your OEM new truck and/or trailer dealer or with Meritor directly. Failure to notify Meritor of (I) the intended vocational use of the vehicle or (II) a change in vocational use from that which was originally designated, will result in the application of a one year, unlimited mileage, parts only warranty (1/Unl/P) from the initial in-service date.

A second Owner and each subsequent Owner must also notify Meritor as to the intended vocational use of the vehicle. This notification can be sent directly to Meritor or through the OEM new truck and/or trailer dealer. The duration and mileage coverage of this warranty cannot exceed the coverage extended to the first Owner after his or her initial designation of vocational use.

Coverage under Meritor's warranty requires that the application of products be properly approved pursuant to OEM and Meritor approvals. Refer to TP-9441 for axles, SP-8320 for trailer axles, TP-12126 for drivelines, and/or contact Meritor regarding specific application approval questions on any product line.

(3) What is the Cost of this Warranty?

There is no charge to the Owner for this warranty.

(4) What is not Covered by this Warranty?

This warranty does not cover normal wear and tear; nor does it cover a component that fails, malfunctions or is damaged as a result of (I) improper installation, adjustment, repair or modification (including the use of unauthorized attachments or changes or modification in the vehicle's configuration, usage, or vocation from that which was originally approved by Meritor), (II) accident, natural disaster, abuse, or improper use (including loading beyond the specified maximum vehicle weight or altering engine power settings to exceed the axle and/or driveline capacity), or (III) improper or insufficient maintenance (including deviation from approved lubricants, change intervals, or lube levels). This warranty does not cover any component or part that is not sold by Meritor. For vehicles that operate full or part time outside of the United States and Canada, a one year, unlimited mileage, parts only warranty (1/Unl/P) will apply.

(5) Remedy.

The exclusive remedy under this warranty shall be the repair or replacement of the defective component at Meritor's option. Meritor reserves the right to require that all applicable failed materials are available and/or returned to Meritor for review and evaluation.

(6) Disclaimer of Warranty.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESSED, IMPLIED OR STATUTORY INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.

(7) Limitation of Remedies.

In no event shall Meritor be liable for special, incidental, indirect, or consequential damages of any kind or under any legal theory, including, but not limited to, towing, downtime, lost productivity, cargo damage, taxes, or any other losses or costs resulting from a defective covered component.

(8) To Obtain Service.

If the Owner discovers within the applicable coverage period a defect in material or workmanship, the Owner must promptly give notice to either Meritor or the dealer from which the vehicle was purchased. To obtain service, the vehicle must be taken to any participating OEM new truck and/or trailer dealer or authorized Meritor service location. The dealer will inspect the vehicle and contact Meritor for an evaluation of the claim. When authorized by Meritor, the dealer will repair or replace during the term of this warranty any defective Meritor component covered by this warranty.

(9) Entire Agreement.

This is the entire agreement between Meritor and the Owner about warranty and no Meritor employee or dealer is authorized to make any additional warranty on behalf of Meritor. This agreement allocates the responsibilities for component failure between Meritor and the Owner.

Vehicle models, brands and names depicted herein are the property of their respective owners, and are not in any way associated with Meritor, Inc., or its affiliates.



Meritor Heavy Vehicle Systems, LLC
2135 West Maple Road
Troy, Michigan 48084 USA

For more information:
call Ontrac at 866-668-7221
or visit meritor.com

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