

## Rosenbauer – Central States Division

One (1)  
BS-10-3600

### CHASSIS

A chassis shall be furnished per the attached specifications.

### CAB AND CHASSIS SPECIFICATIONS

<b>APPLICATION:</b>	2006 International 4400 SBA 4x2
<b>MISSION:</b>	Requested GVWR: 35000. Calc. GVWR: 35000 Calc. Geared Speed: 77.4 MPH
<b>DIMENSION:</b>	Wheelbase: 207", CA: 96", Usable CA: 96", Axle to Frame: 75
<b>ENGINE, DIESEL:</b>	(International DT570} 50 State, 330 HP, 950 lb-ft Torque @ 1200 RPM, 2200 RPM Governed Speed, #2 Bell Housing
<b>TRANSMISSION, AUTOMATIC:</b>	(Allison 3000EVS_P) Close Ratio, 6-Speed; Includes Oil Level Sensor, With Provision for PTO, Less Retarder
<b>CLUTCH:</b>	Omit Item (Clutch & Control)
<b>AXLE, FRONT DRIVING TYPE:</b>	(International I-120SG), 12,000-lb. Capacity
<b>AXLE, REAR, SINGLE:</b>	(Dana Spicer 23090S) Single Reduction 23,000-lb Capacity with 200 Wheel Ends Gear Ratio: 5.29
<b>CAB:</b>	Conventional Steel; 6-Man Crew Cab
<b>TIRE, FRONT:</b>	(2) 11R22.5 Unisteel G149 (GOODYEAR) 501 rev/mile, load range G, 14 ply
<b>TIRE, REAR:</b>	(4) 11R22.5 G328 (GOODYEAR) 496 rev/mile, load range H, 14ply
<b>SUPENSION, RR SPRING, SINGLE:</b>	Vari-Rate; 23,500-lb Capacity, includes 4500-lb. Multileaf Auxiliary

### Description

Base Chassis, Model 4400 SBA 4X2 with 195" Wheelbase, 84" CA, 84" Usable CA, and 75 Axle to Frame.

TOW HOOK FRONT (2) Frame Mounted.

FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.250" x 3.610" x 0.375"  
(260.0mm x 91.7mm x 9.5mm); 456.0" (11582mm) Maximum OAL

BUMPER, FRONT full Width, Aerodynamic, Chrome Plated Steel; 0.142" Material Thickness

## Rosenbauer – Central States Division

AXLE, FRONT NON-DRIVING TYPE (International I-120SG) Single Reduction 12,000-lb Capacity

SUSPENSION, FRONT, SPRING Parabolic, Taper Leaf; 12,000-lb Capacity; With Shock Absorbers

Includes

:SPRING PINS Rubber Bushings, Maintenance-Free

BRAKE SYSTEM, AIR Dual System for Straight Truck Applications

Includes

:AIR COMPRESSOR AIR SUPPLY LINE International Engines Naturally-Aspirated

:BRAKE CHAMBERS, SPRING (2) Rear Parking

:BRAKE LINES Color Coded Nylon

:SLACK ADJUSTERS, FRONT Automatic

:SLACK ADJUSTERS, REAR Automatic

:PARKING BRAKE VALVE Color-Coded Yellow Knob, Located on Instrument Panel

:DRAIN VALVE Twist-Type

:SPRING BRAKE MODULATOR VALVE

:GAUGE, AIR PRESSURE Located in Instrument Cluster Air 1 and Air 2 Gauges;

DRAIN VALVE, AUTOMATIC {Bendix DV-2} With Heater, for Air Tank

AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-channel)

AIR DRYER {Bendix AD-IP} With Heater

BRAKES, FRONT, AIR CAM S-Cam; 16.5" x 5.0", Includes 20 Sq. In. MGM Long Stroke Brake Chambers

Includes:

:DUST SHIELDS, FRONT BRAKE

BRAKES, REAR, AIR CAM 16.5" x 7.0", Includes MGM TR3030 Long Stroke Brake Chamber and Heavy duty Spring Actuated Parking Brake

AIR COMPRESSOR {Bendix Tu-Flo 550} 13.2 CFM

DUST SHIELDS, FRONT BRAKE

DUST SHIELDS, REAR BRAKE

STEERING COLUMN Stationary

STEERING WHEEL 2-Spoke, 18" Diam, Black

STEERING GEAR {Sheppard M-100} Power

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EXHAUST SYSTEM Single, Horizontal, Stainless Steel Muffler, With Internal Catalytic Converter, Short Tail Pipe, Frame Mounted Right Side

ENGINE EXHAUST BRAKE, DLOGIC (Diamond Logic) for DT570 and HT570 Engines; Combination Engine Brake & Exhaust Brake, Electronically Activated

ELECTRICAL SYSTEM 12-Volt, Standard Equipment

Includes:

:FUSES ELECTRICAL SAE Blade-Type

:TURN SIGNAL SWITCH Self-Canceling, Headlight Dimmer (with Flash-To-Pass Feature)

:HORN, ELECTRIC Single

:PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light

:STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector

:STARTER SWITCH Electric Key Operated

:TURN SIGNALS, FRONT Flush Mounted Include Reflectors and Auxiliary Side Turn signals, Solid State Flashers;

:DATA LINK CONNECTOR In Cab For Vehicle Programming and Diagnostics

:WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted

:WINDSHIELD WIPER SWITCH 2-Speed Integral with Turn Signal Switch with Wash and Intermittent Feature,

:WIRING, CHASSIS Color-coded and Continuously Numbered

CIGAR LIGHTER

HORN, ELECTRIC (2)

ALTERNATOR (Leece-Neville 4949PA) 12 Volt 270 Amp. Capacity, Pad Mounted

Battery System (3) (International) Maintenance-Free 12-Volt 1950 CCA Total

Radio {Panasonic CQ-5200U} AM/FM Stereo With CD Player, Weatherband, Clock With Alarm, Includes Multiple Coaxial Speaker

Includes:

: SPEAKERS IN CAB (4) Coaxial with Premium Interior

:SPEAKERS IN CAB (2) Coaxial with Delux Interior

HORN, AIR {Grover} Black, Single Trumpet, Air Solenoid Operated, Mounted Behind Bumper on Right Side

BATTERY DISCONNECT SWITCH {Joseph Pollack 51-315} Positive Type, Lever Operated, Mounted on Cab Floor

SWITCH, AIR HORN, PASSENGER Fire Truck Application; Switch Located in Instrument Panel Close to Passenger, Driver Also to Activate Switch at Steering Wheel.

HEADLIGHTS Halogen, Composite Aero Design for Two Light System ; Includes Daytime Running Lights

STARTING MOTOR {Leece-Neville MS2} 12-Volt; less Thermal Over-Crank Protection

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CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III with Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses

GRILLE Chrome

FRONT END Tilting, Fiberglass, With Three Piece Construction

GRILLE EMBER SCREEN Mounted to Grille to Keep Hot Embers out of Engine Air Intake System

PAINT SCHEMATIC, PT-1 Single Color, Design 100

Includes

:PAINT SCHEMATIC ID LETTERS "GA"

PAINT TYPE Base Coat/Clear Coat, 1-2 Tone

PAINT CLASS Single Custom Color.

CLUTCH Omit Item (Clutch & Control)

ENGINE, DIESEL {International DT570} 50 State, 330 HP, 950 lb-ft Torque @1200 RPM, 2200 RPM Governed Speed, #2 Bell Housing

Includes

:FUEL/WATER SEPARATOR Mounted on Engine and FUEL FILTER in a Single Assembly,  
:COLD STARTING EQUIPMENT Intake Manifold Electric Grid Heater with Engine ECM Control  
:WET TYPE CYLINDER SLEEVES  
:CRUISE CONTROL Electronic; Controls Integral to Steering Wheel  
:ENGINE SHUTDOWN Electric, Key Operated  
:GOVERNOR Road Speed, Electronic  
:ENGINE OIL DRAIN PLUG Magnetic  
:OIL FILTER, ENGINE Spin-On Type  
:DAMPER, CRANKSHAFT Viscous  
:FAN Optimized Position

FAN DRIVE {Horton Drivemaster} "Two Speed" Type, With Residual Torque Device for Disengaged Fan Speed, Use With International I6 Engines

Includes

:FAN Nylon

RADIATOR Aluminum; 2-Row, Cross Flow, Over Under System, 630 Sqin Louvered, With 270 Sqin Charge Air Cooler, 4.25" Core

Includes

:ANTI-FREEZE Shell Rotella Extended Life Coolant -40F (-40C)  
:DEAERATION SYSTEM with Polypropylene Tank  
:RADIATOR HOSES Premium, Rubber

AIR CLEANER Single Element

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THROTTLE, HAND CONTROL, Engine Speed Control for PTO; Electronic, Stationary Pre-Set, Two Speed Settings; Mounted on Steering Wheel

ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Module and Connector for Body Builder Installation of Remote Engine Control, With SAE J1939 Communication

FAN DRIVE

ENGINE WATER COOLER {Sen-Dure} Auxiliary, For Use With Fire Trucks

EXPANDED ENGINE TEMP EFFECTS to Allow Higher Engine Operating Temperature Range; Includes Nylon Surge Tank and 15 psi Pressure Cap

TRANSMISSION, AUTOMATIC {Allison EVS3000\_P} Close Ratio, 6-Speed; Includes Oil Level Sensor, With Provision for PTO, Less Retarder

Includes

:TRANSMISSION OIL PAN Magnet in Oil Pan

TRANSMISSION SHIFT CONTROL (Allison) Push-Button Type; for Allison 3000 & 4000 Series Transmission

OIL COOLER, AUTO TRANSMISSION Water to Oil Type in Combination With Air to Oil Type, for Allison Transmission

ALLISON SPARE INPUT/OUTPUT for Emergency Vehicle Series (EVS); Fire/Pumper, Tank, Aerial/Ladder

AXLE, REAR, SINGLE {Dana Spicer 23090S} Single Reduction 23,000-lb Capacity with 200 Wheel Ends: Gear Ratio: 5.29

Includes

:REAR AXLE DRAIN PLUG (1) Magnetic

SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 23,500-lb Capacity, Includes 4500-lb Capacity Multileaf Auxiliary

FUEL TANK Top Draw; D Style, Steel, 50 U.S. Gal., 189 L Capacity, 16" Deep, With Quick Connect Outlet, Mounted Right Side, Under Cab

Includes

:FUEL LINES Nylon Tubing With O-Ring Snap-On Quick-Connect Fittings at Both Ends

CAB Conventional Steel; 5-Man Crew Cab

Includes

:CLEARANCE/MARKER LIGHTS (5) Flush Mounted

:ARM REST (2) Molded Plastic, Smoke Gray; One Each Door

:FLOOR COVERING Rubber, Black

:COAT HOOK Located on Rear Wall, Centered Above Rear Window

:GRAB HANDLE, CAB INTERIOR (1) "A" Pillar, Passengers Side

:GRAB HANDLE, CAB INTERIOR (2) "B" Pillar Mounted, One Each Side

:STEP (4) Two Steps Per Door

## Rosenbauer – Central States Division

:GLASS, ALL WINDOWS Tinted

GAUGE CLUSER English With English Electronic Speedometer

Includes

:ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout

:WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)

:GAUGE CLUSER GAUGES (5) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter

GAUGE, OIL TEMP, ALLISON TRAN

SEAT, DRIVER {M.O. Bostrom Sierra Air 140} Air Suspension, High Back, Vinyl with Covered Back and International on Headrest

Includes

:SEAT BELT 3-Point, Lap and Shoulder Belt Type

SEAT, PASSENGER {Gra-Mag} Non Suspension, High Back With Integral Headrest, Vinyl, With Fixed Back

Includes

:SEAT BELT 3-Point, Lap and Shoulder Belt Type

SEAT, REAR BENCH {H.O. Bostrom Tanker 400Ct} for SCBA; Three Individual Seats on One Riser, Non Suspension, High Back, Vinyl, With Covered Back and International on Head Rest

Includes

:SEAT BELT (3) Two 3-Point Shoulder Belts and One 2-Point Lap Belt (Center Position)

GRAB HANDLE (2) Chrome Towel Bar Type Anti-Slip Rubber Inserts, for Cab Entry Mounted Left and Right

GRAB HANDLE, ADDITIONAL (2) Chrome; Towel Bar Type With Anti-Slip Rubber Inserts; Mounted Left and Right Side on Exterior, Rear of Rear Doors, With Crew Cab

MIRRORS (2) {Lang Mekra} Styled; Rectangular, 7.09 x 15.75, Brackets Breakaway Type, With 102 Wide Spacing, With Integral Convex Both Sides, With All Heated Heads, Thermostatically Controlled, With Bright Finish Head and Brackets

SEAT BELT All Red; 4 to 6

INSTRUMENT PANEL Center Section, Flat Panel

AIR CONDITIONER {International Blend-Air} With Integral Heater & Defroster

Includes

:REFRIGERANT Hydrofluorocarbon HFC-134A

:HEATER HOSES Premium

FRESH AIR FILTER for HVAC

## Rosenbauer – Central States Division

### CAB INTERIOR TRIM Deluxe; for Crew Cab

#### Includes

- :CONSOLE, OVERHEAD Molded Plastic with Dual Storage Pockets and Retainer Nets and CB Radio Pocket; Smoke Gray with Black Netting Over Storage Pockets
- :”A” PILLAR COVER Molded Plastic, Smoke Gray
- :HEADLINER Printed Cloth
- :INSTRUMENT PANEL TRIM Molded Plastic, Drawbridge Gray with Black Center Section, Hidden Cup Holder and Ash Tray (Pull-Out)
- :DOME LIGHT, CAB Rectangular, Center Mounted, Integral to Console Door Activated, Timed Theater Dimming
- :SUN VISOR (2) Padded Vinyl Integral to Console with Toll Ticket Strap and with Integral Extenders
- :STORAGE POCKET, DOOR (1) Molded Plastic, Smoke Gray, Full-Length; Driver's Door
- :CAB INTERIOR TRIM PANELS Molded Plastic, Full-Height; All Exposed Interior Sheet Metal is Covered
- :DOOR TRIM PANELS (2) Molded Plastic; Driver and Passenger Doors

### CAB REAR SUSPENSION Air Bag Type

WHEELS, FRONT DISC; 22.5” Painted Steel, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims, With Steel Hubs

#### Includes

:WHEEL SEALS, FRONT Grease Lubricated, Includes Wheel Bearings

WHEELS, REAR DUAL, DISC; 22.5” Painted Steel, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, metric Mount, 8.25 DC Rims; With Steel Hubs.

#### Includes

:WHEEL SEALS, REAR Oil Lubricated, Includes Wheel Bearing

(4) TIRE, REAR 11R22.5 G328 RTD (GOODYEAR) 496 rev/mile, load range G, 14 ply

(2) TIRE, FRONT 11R22.5 G149 (GOODYEAR) 501 rev/mile, load range G, 14 ply

## Rosenbauer – Central States Division

### CHASSIS ADDITIONS AND MODIFICATIONS

One (1)  
CC-50-0120

#### CHASSIS STEP SLIDE OUT TRAY

Step under the driver's side cab entrance door shall be provided with fully enclosed, storage compartment designed to be as large as possible and constructed of the same material as the running boards. A heavy-duty slide-out drawer shall be provided in each compartment with roller bearing slides and stainless steel D-handle latches. The step surface of the compartment shall have slip resistant overlay material installed.

One (1)  
CC-50-0122

#### CHASSIS STEP SLIDE OUT TRAY

Step under the passenger side cab entrance door shall be provided with fully enclosed, storage compartment designed to be as large as possible and constructed of the same material as the running boards. A heavy-duty slide-out drawer shall be provided in each compartment with roller bearing slides and stainless steel D-handle latches. The step surface of the compartment shall have slip resistant overlay material installed.

One (1)  
CC-50-0510

#### STEP TYPE FUEL TANK

There shall be a step type fuel tank furnished with the chassis.

One (1)  
CC-50-5500

#### FRONT MUD FLAPS

Heavy-duty, black colored, rubber mud flaps shall be furnished and installed behind the front wheels of the vehicle. Mud flaps shall extend the full width of the front tires and are to be attached with stainless steel fasteners.

One (1)  
CC-50-6000

#### REAR MUD FLAPS

Heavy-duty, black colored, rubber mud flaps shall be furnished and installed behind the rear wheels of the vehicle. Mud flaps shall extend the full width of the rear duals and are to be attached with stainless steel fasteners.

One (1)  
CC-51-1100

#### HORIZONTAL CHASSIS EXHAUST

The chassis exhaust system shall be extended to the front of the right rear wheel.

One (1)  
CC-51-1200

#### CHROME EXHAUST TIP

A chrome exhaust elbow shall be furnished and installed at the terminating point of the exhaust system.

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One (1)  
CC-51-1300

### **CHASSIS EXHAUST HEAT SHIELD**

The chassis exhaust system shall have a heat shield installed where the exhaust pipe passes below the side compartments.

Three (3)  
CC-60-2000

### **SCBA BRACKETS IN CAB**

There shall be an SCBA bracket with collision restraint strap mounted in each chassis seating position as specified by the Fire Department.

One (1)  
CC-65-0400

### **ALTERNATOR**

The alternator shall be of adequate size to meet the NFPA requirements and to accommodate the specific apparatus electrical load.

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One (1)  
DH-20-1000

### **UL TEST**

The pump shall undergo an Underwriters Laboratories Incorporated test per Class A requirements of NFPA #1901 prior to delivery of the completed apparatus. The UL acceptance certificate shall be furnished with the apparatus on delivery.

One (1)  
DW-01-1600

### **DARLEY PSP-1250 GPM SINGLE STAGE FIRE PUMP**

The centrifugal type fire pump shall be a DARLEY model PSP midship mounted with a rated capacity of 1250 GPM. The pump shall meet NFPA 1901 requirements.

One (1)  
DW-02-1700

### **SINGLE STAGE FIRE PUMP**

At time of delivery the pump shall be UL tested and rated as follows:

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

Suction intakes shall be provided with removable die cast zinc screen designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

Fire pump shall be driven by a midship mounted high strength gear drive transmission.

The shift engagement shall be accomplished by a free-sliding collar and shall incorporate an internal locking mechanism to insure that collar will be maintained in ROAD or PUMP operation.

The pump casing shall be a three piece, vertically split design, high strength gray iron. The impeller shall be a single suction double hubbed, balanced both mechanically and hydraulically for virtually vibration free operation. Replaceable bronze wear rings shall be provided.

The impeller shaft shall be stainless steel, heat treated, and precisely machined and ground to size. All bearings are to be oil or grease lubricated, ball-type, located outside the pump casing in the pump transmission, to accurately align and support the impeller shaft assembly and input shaft. Ball bearings are to be deep groove type, designed to carry both radial and axial loads. A face-type, self-adjusting, corrosion and wear resistant mechanical seal is to be provided. Helical cut crown-shaved gears, carbonized and hardened alloy steel shall be provided.

The pump shall be provided with a plate giving the rated flow at "capacity" and "pressure" test pressures, together with the R.P.M. of the engine at those pressures and deliveries and mounted in clear view of the pump operator's panel. Data plate shall include model and serial numbers of the pump body and chain transmission, hydro and discharge test pressures, and the date of pump and transmission manufacture.

## Rosenbauer – Central States Division

All pump components including relief valve, pump shift, priming system and drain valve shall be manufactured by the Darley Company to insure sole source responsibility and engineered compatibility.

### **PRIMING SYSTEM**

The pump shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds with the pump dry, through 20 feet of suction hose of appropriate size.

A high capacity, electrically driven rotary vane priming pump shall be provided.

The priming system shall include a one gallon-oil reservoir tank that is conveniently located for easy access. Priming tank shall be properly vented so as to provide priming pump lubrication.

A vacuum test with a capped suction of at least 20' long shall develop 22" of vacuum and hold a vacuum with a drop not in excess of 10" in 5 minutes.

One (1)  
DW-05-0100

### **MANUAL CONTROL PRIMING PUMP**

Priming pump shall be activated by a mechanical/electric valve with a single pull control located at the pump operator's panel area. Valve actuation may be accomplished while the main pump is operational, if necessary to assure a complete prime.

One (1)  
DW-05-1000

### **PUMP PACKING**

Stuffing box shall be integral with the pump body and be equipped with injection type packing system to permit adjustment or replacement of packing without disturbing the pump. Packing to be injected into the stuffing box from external supply cylinder by a single injection screw. Injection pressures are equalized around the shaft to minimize friction and heat generation. Packing can be renewed by removing the plunger and inserting plastallic packing pellets as needed.

One (1)  
DH-20-1200

### **ALTITUDE REQUIREMENTS**

The apparatus shall be designed to meet the specified rating at 2000 feet altitude.

One (1)  
DH-20-2000

### **PUMP COOLING LINE**

A 3/8" cooling line shall be installed to recirculate water from the pump back to the water tank, to cool the pump during pro-longed pumping operations. The cooling line shall be controlled at the operator's position with a quarter turn valve.

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One (1)  
DH-20-5000

### HEAT EXCHANGER

A heat exchanger shall be provided on the pump driving engine cooling system. The heat exchanger shall not allow mixing of the pump driving engine coolant and water from the fire pump.

A gated line shall be installed to provide water from the fire pump to the pump driving engine heat exchanger to assist in engine cooling during pumping operations. The heat exchanger line shall be controlled at the pump operator's panel.

One (1)  
DW-05-7000

### DISCHARGE PRESSURE RELIEF VALVE

Pump pressure shall be controlled by a Darley Fire Pump Company automatic relief valve that is capable of operation over a range of 75 to 300 psi net pump pressure. The Relief Valve shall be controlled at the pump operator's position. Relief valve shall have two controls, one for pressure adjustment and the other an on/off control. Pilot valve shall maintain set pressure until manual reset by the pump operator. Relief valves requiring pressure reset after each use of the pump are not acceptable.

Relief pilot valve orifice shall be protected from malfunction due to sand or other sediment in the water by a strainer that can be removed, cleaned, and replaced at the operator's panel while the pump is operating. Relief valves that require orifice cleaning within or below the pump enclosure are not acceptable.

Operators panel mounted relief valve indicator lights shall be provided. Lights shall include two color-indicating lights to show position of relief valve. A green light shall indicate a fully closed relief valve and an amber light shall display when the valve begins to open.

One (1)  
DW-05-7500

### MANIFOLD DRAIN

A manifold drain valve shall be furnished with all pump drains connected to it so that the entire pump system may be drained by one control. Drain valve assembly shall consist of a stainless steel plunger and a bronze body.

A control handle is to be provided and located below the driver's side running board of the pump house, properly identified as MASTER DRAIN.

One (1)  
DW-99-0100

### DARLEY PUMP WARRANTY

W.S. Darley & Co. ("Darley") warrants to the original purchaser (the "Customer") only, subject to the terms and conditions of this Limited Warranty, that Darley will at its option, repair or replace, in whole or in part, any Champion Pump (hereafter, "Pump") which Darley determines to be defective in materials or workmanship produced or performed by Darley, for a period commencing on the date such Pump is shipped to Customer from Darley's plant ("the Ship Date") and ending on the earlier of **(five) years or 5000 hours** of pump usage following the Ship date (the "Warranty Period"). Darley may also, at its discretion, elect to refund the purchase price to the Customer in lieu of any repair or replacement. Original Equipment Manufacturer ("OEM")

## Rosenbauer – Central States Division

Customers may transfer this warranty to their end purchasers without the written consent of Darley, provided such OEMS identify such customers by written notice to Darley.

This warranty does not cover any parts or equipment which may be included in a Pump, but which are not manufactured by Darley, and such non-covered items shall carry only such warranties, if any, made by their respective manufacturers and assignable to Customer. This warranty further excludes any coverage of damage or loss to any equipment or structures in which a Pump is incorporated or to which a Pump may be attached, as well as any damage to or failure of a Pump caused by or related to misuse, accident, failure to maintain or service, abuse, negligence, applications which exceed Darley's recommended limitations, or in the event of Customer's unauthorized or improper modifications of a Pump and (regardless of any actual or constructive knowledge Darley may have of such modifications), or in the event a pump has been repaired, altered, or treated by anyone other than Darley-trained technicians, Darley or its authorized service provider.

The following repairs or replacement expenses are specifically excluded from the scope of the warranty: Non-defective parts worn, exhausted or consumed through normal usage; consumable parts subject to routine replacement, including but not limited to pump packing, O-rings, gaskets, intake screens, anodes or filters; and routine maintenance specified in the operator's manual.

Customer shall notify Darley in writing within the Warranty Period of any claim under this Warranty, to Darley's Melrose Park, Illinois office (except as otherwise directed), and Customer shall comply with Darley's Reasonable claim documentation and processing according to Darley's Returned Goods Authorization form and procedures, which should be requested when making a warranty claim.

Within 30 days of Customer's receipt of a Returned Goods Authorization, Customer shall return the Pump or claimed defective component thereof to Darley, F.O.B. Darley's designated plant. Customer shall bear all of its own costs of dismantling, removing, shipping, storing, insuring and reinstalling Pumps or parts thereof which are submitted to Darley for warranty evaluation. Darley shall within a reasonable time examine the returned item and determine whether such item is defective, and at Darley's election, whether to repair, replace, recondition, or refund the price thereof. The amount of any refund shall not exceed Customer's purchase price. No reimbursement or allowance will be made to Customer for Darley's labor costs or other expenses of repairing or replacing defective products or workmanship, all such costs of which shall be billed to Customer. Any repaired Pumps or replacement parts shall also be covered by this limited warranty, subject to the same original Warranty Period (which shall not be extended by reason of any repair or replacement).

This limited warranty shall be Customer's sole and exclusive contractual remedy for any defect or failure of a Pump or component, and as such excludes any remedy or cause of action in tort or contract against Darley or any of its suppliers or distributors for liability to Customer or to any other person for any incidental, consequential, or other damages (including but not limited to personal injury; death; property damage due to fire, water, or any other cause; loss of crops, timber, or wildlife; loss of time or interruption of operations or related costs; delays; demurrage; lost profits; or indirect or special damages) arising out of or relating to the use (including any malfunction) or inability to use any original, repaired, replaced, or substitute Pump, regardless of the reason for such damage, loss or injury. Under no circumstance will Darley's liability for any claim hereunder, including for breach of warranty of any cause of action related to an alleged breach of this warranty, exceed Customer's purchase price for the pump or component thereof which is the subject of the warranty.

## Rosenbauer – Central States Division

THIS LIMITED WARRANTY IS THE ONLY WARRANTY MADE BY DARLEY, AND IS IN LIEU OF ANY OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, ANY OF WHICH ARE DISCLAIMED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY, OF FITNESS FOR A PARTICULAR PURPOSE, OR OF FREEDOM FROM PATENT INFRINGEMENT. CUSTOMER ASSUMES ALL RISK OF USING ALL PUMPS FOR ALL FORESEEN AND UNFORESEEN PURPOSES, CUSTOMER'S REMEDIES CONTAINED HEREIN ARE EXCLUSIVE.

All terms of this limited warranty are subject to the standard W.S. Darley & Co. purchase contract standard terms and conditions in effect at the time of sale, and to any written modifications to this standard limited warranty agreed to by Darley and Customer (including but not limited to the Darley Champion Pump Premium Protection Plan). Any bad faith invocation of a warranty claim, or customer's breach of purchase contract (including OEM breaches), will void Darley's obligations to Customer Hereunder. The scope and operation of this limited warranty shall be interpreted under Illinois law.

One (1)  
EE-01-1000

### **PUMP SHIFT INDICATOR LIGHTS**

Fire pump shall be driven by a heavy duty 10 bolt PTO capable of enough torque to operate the fire pump at rated capacity for continuous duty. The PTO shall be approved by Allison for this type of service. The PTO shall be of a "Hot Shift" style capable of full capacity stationary pumping. Stationary pumping shall be done with chassis transmission in neutral. Pump engagement lights and safety interlock system for PTO driven pumps that are to be used for Stationary Pumping Only with the transmission in neutral shall be as follows:

- A "Pump Engaged" indicator light shall be provided both in the driving compartment and on the pump operator's panel to indicate that the pump shift has been successfully completed.
- An "OK to Pump" indicator light shall be provided in the driving compartment to indicate that the pump is engaged, the chassis transmission is in neutral, and the parking brake is engaged.
- A "Throttle Ready" indicator shall be provided at the pump operator's panel that is energized when the "OK to Pump" indicator is energized or when the chassis transmission is in neutral and the parking brake is engaged.
- An interlock system shall be provided to prevent advancement of the engine speed at the pump operators panel unless the chassis transmission is in neutral and the parking brake is engaged, or the apparatus is in "OK to Pump" mode.
- Controls to engage the PTO are to be in the cab, and easily accessible.

One (1)  
EE-01-2210

### **DARLEY PTO PUMP INSTALLATION**

The Darley PTO fire pump shall be installed in conjunction with the body manufacturing process. Fire pump installation shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets. PTO drive shaft(s) shall be spin balanced prior to final installation.

One (1)  
EE-02-1000

### **INTAKE RELIEF VALVE**

A 2-1/2" intake relief valve preset at 150 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

## Rosenbauer – Central States Division

Discharge side of the intake relief valve shall be plumbed to the right side below the running boards, away from the pump operator, and shall terminate with a 2-1/2" NST male chrome threaded adapter, marked with an engraved tag "Intake pressure relief outlet - Do Not Cap".

The intake relief valve to be reset during the pump test to 150 PSI.

One (1)  
EE-02-5100

### **HOT DIP GALVANIZED INTAKE MANIFOLD**

The suction manifold shall be fabricated from heavy-duty tubular steel. The suction manifold shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to the galvanizing process. After testing the entire suction manifold shall be hot dip galvanized to minimize corrosion. The hot dip galvanized suction manifold shall be attached to the pump intake volute with a heavy-duty, flexible victaulic coupling.

The hot dip galvanized manifold assembly shall have a ten (10) year warranty.

One (1)  
EE-02-5600

### **DRIVER SIDE STEAMER INLET**

There shall be one (1) steamer inlet furnished on the driver side of pump panel. The suction inlet shall have 6" NST thread. The suction inlet shall have a removable strainer provided inside the external inlet.

Steamer inlet to be as short as possible to allow suction fittings to be attached without extending past the side running boards.

One (1)  
EE-02-5700

### **PASSENGER SIDE STEAMER INLET**

There shall be one (1) steamer inlet furnished on the passenger side of pump panel. The suction inlet shall have 6" NST thread. The suction inlet shall have a removable strainer provided inside the external inlet.

Steamer inlet to be as short as possible to allow suction fittings to be attached without extending past the side running boards.

One (1)  
EE-20-0500

### **SUCTION CAP DRIVER'S SIDE**

The driver's side suction inlet shall be equipped with a chrome-plated, long handled, cap capable of withstanding 500 PSI.

One (1)  
EE-20-1000

### **SUCTION CAP PASSENGER SIDE**

The passenger's side suction inlet shall be equipped with a chrome-plated, long handled, cap capable of withstanding 500 PSI.

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One (1)  
ES-02-1500

### **2-1/2" GATED SUCTION INTAKE DRIVER SIDE**

A 2-1/2" independent gated suction intake shall be provided on the driver's side pump panel. Intake shall be provided with a quarter-turn valve and control. The intake shall have a 3/4" drain valve with handle. Each intake shall have chrome-plated female swivel adapter with removable internal screen and a chrome-plated plug type cap with end chain.

One (1)  
ES-02-1510

### **SUCTION VALVE CONTROL**

Suction valve shall have swing type control handle located adjacent to valve.

One (1)  
ES-02-2000

### **2-1/2" GATED SUCTION INTAKE PASSENGER SIDE**

A 2-1/2" independent gated suction intake shall be provided on the passenger's side pump panel. Intake shall be provided with a quarter turn-valve and control. The intake shall have a 3/4" drain valve with handle. Each intake shall have chrome-plated female swivel adapter with removable internal screen and a chrome-plated plug type cap with end chain.

One (1)  
ES-02-2010

### **SUCTION VALVE CONTROL**

Suction valve shall have swing type control handle located adjacent to valve.

One (1)  
ES-04-0000

### **TRIM PANEL**

A bolt on stainless steel trim panel shall be provided for easy access to the valve for repair or removal without removing the side panel on all intakes and discharges.

One (1)  
FA-00-1000

### **HOT DIP GALVANIZED DISCHARGE MANIFOLD**

The discharge manifold shall be fabricated from heavy-duty tubular steel. The discharge manifold shall be fabricated, welded, all fittings attached and pressure tested prior to the galvanizing process. After testing the entire suction manifold shall be hot dip galvanized to minimize corrosion. The hot dip galvanized discharge manifold assembly shall be bolted to the pump and have stabilizer arms attached to reinforce the discharge manifold.

The hot dip galvanized manifold assembly shall have a ten (10) year warranty.

One (1)  
FA-01-0000

### **PUMP DISCHARGES**

Each gated discharge outlet shall include an Akron heavy-duty brass, quarter-turn, swing-out ball valve. All lines to have victaulic couplings or hose with stainless steel fittings installed where flex may occur to prevent cracking of the plumbing system. Each discharge shall have 3/4" cast bronze 1/4 turn drain valve complete with reinforced teflon seals, and blowout proof stem rated to 600 psi. A chrome-plated zinc handle shall be provided on each drain valve, complete with a 1"

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X 1 1/2" recessed identification label. Drains shall be aligned in a straight horizontal row at the lower edge of the corresponding pump panel so as to allow for ease of identification and operation. Each drain shall be labeled and numbered to correspond to the respective discharge outlet and coloring.

Individual discharge controls are to be aligned in a straight horizontal row across the pump operator's control panel, directly in-line with the corresponding discharge outlet line pressure gauges.

One (1)  
FA-01-0010

### **GALVANIZED PLUMBING**

All rigid piping five-inch diameter or less shall be galvanized type with tapered thread or victaulic type couplings.

Two (2)  
FA-01-0500

### **DRIVER SIDE DISCHARGE OUTLET**

Each 2-1/2" discharge outlet on the driver's side pump panel shall have a 2-1/2" quarter turn valve with control on pump operator's panel. There shall be a chrome plated 2-1/2" NST adapter that extends through the pump panel. Each discharge shall be provided with chrome-plated 30-degree discharge elbow.

Two (2) 2-1/2" discharges shall be provided on the driver's side pump panel.

Two (2)  
FA-01-0501

### **MANUAL VALVE**

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

Two (2)  
FA-01-0510

### **MANUAL DRAIN VALVE**

The driver's side 2-1/2" discharge outlet shall have a 3/4" drain with individual control on side pump panel.

Two (2)  
FA-01-1000

### **PASSENGER SIDE DISCHARGE OUTLET**

Each 2-1/2" discharge outlet on the passenger's side pump panel shall have a 2-1/2" quarter turn, swing-out valve with control on pump operator's panel. There shall be a chrome-plated 2-1/2" NST adapter that extends through the pump panel. Each discharge shall be provided with chrome-plated 30-degree discharge elbow.

Two (2) 2-1/2" discharges shall be provided on the passenger's side pump panel.

Two (2)  
FA-01-1001

### **MANUAL VALVE**

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

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Two (2)  
FA-01-1010

### **MANUAL DRAIN VALVE**

The passenger's side 2-1/2" discharge outlet shall have a 3/4" drain with individual control on side pump panel.

One (1)  
FA-01-1500

### **DRIVER SIDE REAR DISCHARGE OUTLET**

There shall be one (1) 2-1/2" discharge outlet located on the driver's side rear of the body below the hose bed. The discharge outlet shall have a 2-1/2" quarter turn, swing-out valve with control on pump operator's panel. There shall be a chrome-plated 2-1/2" NST adapter that extends through the rear of the body. The discharge shall be provided with a chrome-plated 30-degree discharge elbow.

One (1)  
FA-01-1501

### **MANUAL VALVE**

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

One (1)  
FA-01-1510

### **MANUAL DRAIN VALVE**

The driver's side rear 2-1/2" discharge outlet shall have a 3/4" drain with individual control on side pump panel.

One (1)  
FA-01-3200

### **DISCHARGE PASSENGER SIDE REAR**

One (1) 1-1/2" discharge outlet located at the passenger's side rear of body below the hose bed. Discharge shall be plumbed with two-inch pipe and two-inch quarter turn swing-out valve with control on pump operator's panel. The discharge outlet shall have 1-1/2" NST male fitting.

One (1)  
FA-01-3201

### **MANUAL VALVE**

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

One (1)  
FA-01-3205

### **MANUAL DRAIN VALVE**

The passenger's side rear 1-1/2" discharge outlet shall have a 3/4" drain with individual control on side pump panel.

Five (5)  
FA-01-3220

### **2-1/2" CAPS AND CHAINS**

The following discharge outlets shall be equipped with a 2-1/2" chrome-plated cap and chain.

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One (1)  
FB-02-2500

### **MONITOR PROVISION**

There shall be a three-inch (3") deluge discharge above fire pump. Deluge outlet shall be plumbed with 3" quarter turn, swing out valve and 3" I.D. pipe with 3" NPT male thread. The three-inch valve shall have a slow close device. Deluge outlet shall have control on pump operator's panel.

One (1)  
FB-02-2502

### **MANUAL VALVE WITH SLOW CLOSE**

Discharge valve shall be swing out type, with slow close and manual control handle located on pump operator's panel.

One (1)  
FB-02-2505

### **MANUAL DRAIN VALVE**

Monitor shall have a 3/4" drain with individual control on side pump panel.

One (1)  
FB-30-5700

### **LIFT OFF MONITOR, DIRECT TRUCK MOUNT AND DUAL INLET GROUND STAND**

There shall be a lift off style monitor and direct truck mount adapter furnished and installed on a three-inch deluge pipe. The monitor shall be capable of 360-degree rotation, and be capable of flowing 1250 GPM when installed on the direct truck mount. The lift off monitor shall have heavy-duty dual lock pins when installed on the direct truck mount or the portable ground stand. The portable ground stand shall have two (2) 2-1/2" NST female swivel inlet connections. Each inlet connection shall have an automatic check valve. The portable ground stand shall have folding legs, a built in safety chain and spanner wrench.

One (1)  
FB-30-7100

### **STREAM SHAPER AND STACKED TIPS**

There shall be an Akron model 3488 stream shaper with a set of Akron model 2499 stacked tips. Stacked tips to have 2-1/2" NST thread with 2", 1-3/4", 1-1/2", 1-3/8" removable tips.

Two (2)  
FC-31-0100

### **1-3/4" CROSSLAY(S) ASSEMBLY ABOVE PUMP**

Crosslay hose bed(s) shall be designed to carry 200 feet of 1-3/4" double jacket fire hose. Crosslay hose bed(s) shall be located above the fire pump. The floor of the crosslay hose bed(s) shall be perforated to allow for drainage. Polished stainless steel hose roller assemblies shall be provided at the sides and lower edges of the crosslay opening on each side of the apparatus body.

Crosslay discharge(s) shall be plumbed using rigid pipe or flexible high-pressure hose coupled with stainless steel fittings. The crosslay shall be provided with 2" brass valve, and a 2" 90 degree swivel adapter with 1-1/2" NST male outlet thread.

Two (2) 1-3/4" crosslays shall be provided.

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Two (2)  
FC-31-0101

### **MANUAL VALVE**

Each discharge valve shall be swing out type with manual control handle located on pump operator's panel.

Two (2)  
FC-31-0108

### **MANUAL DRAIN VALVE**

Each crosslay/speedlay shall have a 3/4" drain with individual control on side pump panel.

One (1)  
FC-31-4200

### **CROSSLAY HOSEBED COVER**

A .125 polished aluminum treadplate hinged cover shall be provided over the crosslay hose bed(s) complete with full length stainless steel piano hinge and with chrome plated lift handles provided on each side of the cover. Stops shall be provided to hold the cover in the open position or to protect cab or other adjacent body components. The hinge shall be located on the forward section of the cover, closest to the chassis cab.

One (1)  
FC-31-4700

### **CROSSLAY END CAPS**

A vinyl coated nylon cover shall be provided over each end of the crosslay hose bed. The vinyl end covers shall be held in place with velcro fasteners.

The color of the crosslay cover end flaps shall be red.

One (1)  
FF-26-8300

### **FOAM SYSTEM**

A Foam Pro Model #1600 built in foam injection system shall be provided with the controls at the operator's panel.

The foam system shall be a fully automatic, electronic, direct injection foam proportioning system. The system shall be capable of Class A foam concentrate. The foam proportioning operation shall be based on an accurate direct measurement of water flows with no water flow restriction. The foam system shall be installed in accordance with the manufacturer's recommendations.

The system shall be equipped with a control module. It shall be installed on the pump operator's panel and enable the pump operator to perform the following functions;

1. Activate the foam system
2. Change foam concentrate proportioning rates of .1% to 1%.
3. Flash a "low concentrate" warning light when the foam concentrate tank runs low of concentrate and in two minutes if foam concentrate is not added to tank, shut the foam concentrate pump down.

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The foam system shall have a 12-volt, 1/3-hp electric motor driven positive displacement piston type foam concentrate pump with a rated capacity of .01 to 1.6 gpm with operating pressures up to 400 psi.

The FoamPro system shall be plumbed to the following discharge outlet.

Both 1-3/4" Crosslays  
Rear 1-1/2" Discharge

One (1)  
FF-27-0100

### **SINGLE FOAM TANK PLUMBING SYSTEM**

The foam tank shall be plumbed with three-quarter inch (3/4") valve and corrosion resistant hose from the foam tank to the foam inlet. There shall be a three-quarter inch (3/4") drain line furnished on the foam tank. Drain valve to be located on foam tank with corrosion resistant hose piped to below the frame level of the chassis.

One (1)  
FF-27-2000

### **FOAM TANK**

A 20-gallon foam concentrate tank shall be furnished as an integral component of the booster tank. The foam tank shall have a separate fill tower provided in a location to allow easy access for filling. Fill tower shall be equipped with a pressure/vacuum vent and have a sealed airtight cover. Tank shall be plumbed to the on board "Class A" foam system. A valved drain shall be provided at the lowest point of the foam tank. The drain shall be plumbed to drain directly to the surface below the apparatus without contacting other body or chassis components.

The following labels shall be attached to the foam tank:

"CLASS A FOAM TANK FILL"  
"WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM"

One (1)  
FH-03-0100

### **TANK TO PUMP PLUMBING**

A 3" *Akron* ball type gated suction valve shall be furnished from the tank to the pump, complete with a flexible connection and enclosed in the pump compartment.

A check valve shall be provided and installed in the line between the tank and the pump to prevent the possibility of backfilling the booster tank through the tank to pump suction line.

Tank suction shall be located in a sump assembly located below the bottom of the tank, properly baffled to prevent surging of water. A 3" cleanout plug shall be provided in the bottom of the tank sump.

One (1)  
FH-03-6000

### **TANK FILL/COOLING LINE**

A gated discharge line from the pressure side of the pump to the tank shall be furnished so the tank can be filled from draft or hydrant. Valve shall have control on the operator's panel. The valve is to be one and one-half inch, (1-1/2") swing out type ball valve and be plumbed to tank with flexible type hose.

## Rosenbauer – Central States Division

One (1)  
FJ-00-0202

### **POLY BOOSTER TANK**

The booster tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity.

The transverse swash partitions shall be manufactured of polypropylene and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall be constructed of polypropylene and extend from the floor of the tank through the cover to allow for positive welding and maximum integrity. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are welded to each other as well as to the walls of the tank.

A forward mounted sump shall be provided in the tank. The sump shall be constructed of polypropylene and be located in the left front quarter of the tank. A polypropylene pipe shall be installed that will sweep from the front of the tank to the sump location. The sump shall have a 3" N.P.T. threaded coupling on the bottom for a plug. This shall be used as a combination clean out and tank drain. An anti-swirl plate shall be located above the sump.

There shall be two standard tank outlets; one for tank-to-pump suction lines, and one for a tank fill line. All tank couplings shall be backed with flow deflectors to break up the stream of water entering the tank.

The tank shall carry a lifetime warranty from its manufacturer.

One (1)  
FJ-01-0208

### **FILL TOWER**

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of polypropylene and with a minimum dimension of 8" x 14" outer perimeter. The fill tower shall be located in the left front corner of the tank. The fill tower shall have a polypropylene screen and a polypropylene hinged cover. Inside the fill tower, shall be fastened a combination vent overflow pipe. The vent overflow shall be polypropylene pipe that is designed to run through the tank and shall be piped behind the rear wheels.

One (1)  
FJ-01-2000

### **BOOSTER TANK**

A 750-gallon capacity polypropylene booster tank shall be provided.

One (1)  
FJ-02-7600

### **HOT DIP GALVANIZED BOOSTER TANK SUBFRAME**

The booster tank shall be mounted on a steel sub frame. Steel sub frame shall consist of two (2) longitudinal 3" x 4 pound channels and two (2) 3" x 4 pound channels welded together to form a tank retention cradle. The tank retention cradle shall prevent fore and aft, and side to side movement of the tank. Additional 3" x 4 pound transverse cross member channels shall be installed to support the floor of the booster tank. The cross members shall have a maximum spacing of 20" for the polypropylene tanks. There shall be an additional full-length longitudinal

## Rosenbauer – Central States Division

member installed in the center of the tank support area. The booster tank shall rest on heavy rubber channels that isolate the polypropylene tank from the sub frame.

The booster tank sub frame shall be hot dip galvanized after fabrication.

One (1)  
FK-01-0500

### **DRIVER SIDE MOUNTED OPERATOR'S CONTROL PANEL**

All pump suction and discharge controls are to be mounted on the driver side pump operator's panel so as to permit operation of the pump from a central location.

All of the pump controls shall be clearly identified with permanently engraved plate type labels.

A full panel width polished light hood with a minimum of three Weldon model 2025 light assemblies shall be provided to illuminate the entire pump operator's control panel.

An additional polished light hood with a minimum of two Weldon model 2025 light assemblies shall be provided to illuminate the right side pump panel. Lights shall be controlled by the operator's panel light switch.

### **GAUGE PANEL**

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

One (1)  
FK-01-1600

### **EXTRUDED ALUMINUM PUMP HOUSE STRUCTURE**

The pump house structure shall be fabricated of extruded aluminum. The structure shall be welded together and have gusset plates on each corner. The pump house shall be mounted separate from the body and chassis and be bolted to the chassis frame rails.

The exposed areas of the pump house structure shall be overlaid with polished aluminum treadplate.

One (1)  
FK-01-2100

### **PUMP PANEL PUMP ENGAGEMENT LIGHT**

One (1) light in the control panel light hood shall come on with a successful pump engagement. This shall be in addition to the "OK to Pump" light on the control panel.

One (1)  
FK-01-2200

### **PUMP PANELS**

The right and left side pump panels shall be constructed entirely of 14-gauge type 304 brushed stainless steel material. The panels are to be completely "bolted" in place for ease of removal.

## Rosenbauer – Central States Division

One (1)  
FK-01-3000

### **PUMP COMPARTMENT ACCESS DOOR**

The passenger's side pump panel shall be provided with a full panel width vertically hinged access door located in the upper portion of the side panel. This door shall be approximately 18" high and as wide as possible, and shall be constructed of polished aluminum treadplate. Two (2) flush mounted, push type latches shall be furnished to hold the door closed. The inspection door shall be attached with a stainless steel hinged and have a retainer cable attached to prevent the door from opening too far.

One (1)  
FK-01-5500

### **DUNNAGE OVER PUMP**

There shall be a dunnage compartment furnished above the pump. The dunnage compartment shall be as wide as possible from side to side, and be a minimum of 12" deep. The floor shall be bolted in place and removable for access to the pump.

One (1)  
FK-10-0000

### **PUMP OPERATORS PANEL**

The following equipment shall be installed on the pump operator's panel.

One (1)  
FK-10-1100

### **MASTER GAUGES**

Class One #LFP410, 4-1/2" diameter liquid filled pressure gauge registering up to 600-lbs per square inch with 1/4" pipe thread connection. The gauge shall be of the type that will not be injured when subjected to a vacuum. The gauge is to have a white face with black lettering. The gauge is to be located at the right of the gauge panel and labeled "DISCHARGE" with an engraved label.

Class One #LFP410, 4-1/2" diameter liquid filled compound gauge shall be provided on the suction side of the pump registering at least 600-lbs pressure and 30-inches of vacuum. The gauge shall have a white face with black lettering. The gauge is to be located to the left of the master discharge gauge and labeled "INTAKE" with an engraved label.

One (1)  
FK-10-2700

### **PRESSURE GAUGES**

Class One #LFP220, 2-1/2" diameter liquid filled pressure gauges shall be provided. The gauges are to have white faces with black lettering. The gauges shall read -30 to 600 lbs. Line pressure gauges shall be individually identified with engraved labels.

Individual line pressure gauges are to be mounted adjacent to the corresponding discharge valve control.

Three (3)  
FK-10-2900

There shall be one (1) pressure gauge for each 1-1/2" discharge outlet.

Five (5)  
FK-10-3000

There shall be one (1) pressure gauge for each 2-1/2" discharge outlet.

## Rosenbauer – Central States Division

One (1)  
FK-10-3100

There shall be one (1) pressure gauge for each deck gun outlet.

One (1)  
FK-11-3810

### **ENGINE THROTTLE**

An electronic vernier engine control throttle shall be provided on the pump operator's control panel for the Navistar electronic engine. The electronic throttle shall be positive locking, crank operated and have a quick release center button. There shall be an engraved identification label provided that reads **THROTTLE**.

One (1)  
FK-12-0900

### **INFORMATION CENTER**

A Class 1 Enfo IV master engine gauge and warning device shall be furnished and installed on the pump operator's panel. The Class 1 Enfo IV is equipped with super bright displays for maximum visibility during daytime hours. The device will monitor the following engine systems;

- Engine RPM display
- System voltage display
- Engine oil pressure display
- Engine water temperature display

One (1)  
FK-12-3800

### **PUMP HOURMETER**

A pump hour meter shall be provided on the pump operator's panel.

One (1)  
FK-12-5200

### **PUMP PANEL IDENTIFICATION LABELS**

All discharges shall be provided with color-coded labels. Identification labels shall be provided at the discharge control, the discharge outlet, and at the discharge drain valve control, color-coded according to NFPA recommended standards.

One (1)  
FK-12-7100

### **PUMP PANEL WATER TANK LEVEL GAUGE**

A Class One ITF Intelli-tank water tank level gauge shall be provided on the pump operator's panel. The Intelli-tank display features wide angle viewing and four (4) ultra-bright LED's for high visibility, even in direct sunlight. The Intelli-tank utilizes a pressure transducer, ILO of probes, to provide nine (9) accurate levels of indication.

One (1)  
FK-12-9200

### **PUMP PANEL FOAM TANK LEVEL GAUGE**

A Class One ITF Intelli-tank foam tank level gauge shall be provided on the pump operator's panel. The Intelli-tank display features wide angle viewing and ultra-bright LED's for high visibility, even in direct sunlight. The Intelli-tank utilizes a pressure transducer, ILO of probes, to provide nine (9) accurate levels of indication.

## Rosenbauer – Central States Division

One (1)  
FK-13-1500

### **UL TEST CONNECTIONS**

A pump pressure and vacuum test block assembly shall be provided and mounted at the pump operator's control panel. The test block assembly shall include plug type caps.

## Rosenbauer – Central States Division

### APPARATUS BODY SPECIFICATIONS

One (1)  
HA-00-0200

#### HOSEBODY

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

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

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

One (1)  
HA-00-0320

#### HOSEBED CAPACITY

The hose bed will be configured to be 55 cubic feet, unless the desired hose load requires more area.

Exact hose bed requirements shall be determined prior to construction.

One (1)  
HA-00-0400

#### HOSEBED FLOORING

Floors of the hose beds are to be provided with removable slat style extruded aluminum hose bed gratings, spaced 1/2" apart for proper hose ventilation. Hose bed gratings are easily lifted out of the main hose bed for access to the top of the specified booster water tank.

Three (3)  
HA-00-1600

#### MAIN HOSEBED DIVIDER

Adjustable hose bed dividers shall be provided in the main hose bed.

The hose bed divider(s) shall be fabricated of 1/4" smooth aluminum sheet stock, welded into a "T" shaped aluminum extrusion for added strength along the bottom edge of the divider.

The divider shall be fully adjustable, mounted using aluminum "C" channel tracks at the front and rear of the divider for full side to side adjustment.

Three (3) hose bed dividers shall be provided.

One (1)  
HA-00-1650

#### HANDHOLD CUTOUTS

There shall be a hand hold cutout provided on the end of the hose bed divider to aid the firefighter in accessing the hose bed.

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One (1)  
HA-01-0800

### **HINGED ALUMINUM HOSEBED COVERS**

Polished aluminum treadplate hose bed covers shall be furnished, extending the full-length and width of the main hose bed.

Covers shall be fabricated of polished aluminum treadplate with cross bracing for maximum strength, and to support the weight of a firefighter standing on the covers when closed. The covers shall be of the sloped design for proper water runoff. Each cover to be equipped with a full length stainless steel piano hinge with chrome plated grab handles at front and rear of each cover. Hose bed covers shall include heavy-duty stops to support them when in the opened position.

One (1)  
HA-01-0900

### **REAR VINYL FLAPS FOR ALUMINUM COVER**

There shall be a vinyl flap attached to each aluminum hose bed cover. The vinyl flaps shall cover the area on the rear of the hose bed from top to bottom. The flaps shall be independent of each other but attachable with velcro in the center. The bottom edge of the flap shall be weighted and also have an eyelet on each outer corner.

The rear hose bed flaps shall be red in color.

One (1)  
HD-00-0200

### **LADDER MOUNTING**

The ladders shall be mounted on the right side of the body, directly above the right side compartments, using heavy duty Cast Products cast aluminum ladder brackets and with spring loaded chrome-plated quick release type clamps. The ladder brackets shall be vertically adjustable.

One (1)  
HD-00-2510

### **GROUND LADDERS FURNISHED BY BODY BUILDER**

The body builder shall furnish the ground ladders. See equipment section of this document for make and model of ladders.

Two (2)  
HD-00-5200

### **HARD SUCTION HOSE TRAYS**

Hard suction hoses shall be mounted in extruded aluminum, self-draining carrier trays with hold down device. The carrier tray(s) shall be mounted on the driver's side of the body.

Two (2)  
HD-00-7015

### **HARD SUCTION HOSE FURNISHED BY BODY BUILDER**

The hard suction hose shall be furnished by the body builder. See equipment section of this document for make and model of hard suction hose.

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One (1)  
KB-02-0200

### **ALUMINUM BODY**

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

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

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

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

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

Compartments to be sweep out design and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity.

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

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

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

### **FASTENERS**

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

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

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

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One (1)  
KB-02-0300

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

The aluminum sheet material used in fabricating the body shall be a minimum of .125 (1/8") in thickness.

One (1)  
KB-02-0420

### **COMPARTMENT FLOORS**

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

One (1)  
KB-10-0300

### **BODY DIMENSIONS**

Apparatus body shall be up to 144" long and 102" wide, reference drawing for actual body length. Body compartments shall be divided into upper and lower areas with the upper area approximately thirteen-inches in depth, and the lower area approximately twenty-six inches in depth. The hose bed shall be 74" wide.

One (1)  
KK-01-1000

### **APPARATUS BODY SUB-FRAME**

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

Two full frame lengths, three-inch (3") 4 pound per foot longitudinal steel channels shall form the sides of the body sub frame and sides of the water tank cradle. Sub frame cross members shall be fabricated with three inch (3") 4 pound per foot heavy steel channel cross members welded to the longitudinal body sub frame sides and the full length frame pads.

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

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

The rear sub frame and lower body platform support members shall be of the "two piece" design, fabricated of 4.3 lb. Per foot heavy channel and welded to the full length sub frame channel liners at the rear.

A minimum of two rear platform support channels shall be provided and constructed of 4.3 lb. Per foot heavy steel material. Each support channel shall have welded in gusset where the support meets the rear sub frame rails.

After fabrication the entire sub frame assembly shall be hot dip galvanized to prevent corrosion. The hot dip galvanized sub frame shall have a lifetime warranty.

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One (1)  
KK-02-0400

### **COMPARTMENT VENTS**

All body compartments shall have a minimum of one (1) louvered panel bolted into a wall to provide the proper airflow inside the compartment. There shall be a filter installed behind the louvered panel. The filter shall be accessible for cleaning by removing the louvered panel on the interior of the compartment.

One (1)  
KK-02-0500

### **BODY AND PUMP HOUSE FLEX JOINT**

When equipped with a fire pump, the body and pump house shall be a separate freestanding component forming a true flex joint between the body and pump house. The intent is to allow either to be easily removed as a single unit without disturbing the other and to provide a flex joint between the two modules. Designs where the pump house and body are interjoined as a common unit do not meet the technical requirement of providing a flex joint or the repairability requirement of these specifications.

One (1)  
KK-02-0652

### **WHEEL WELL LINER AND FENDERETTES**

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

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

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

One (1)  
KK-02-3700

### **REAR TOW EYES**

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

One (1)  
KK-03-0050

### **APPARATUS COMPARTMENTATION**

There shall be large enclosed compartments on both sides of the body, starting at the front of the hose body and continuing to the rear of the apparatus. These compartments shall be as large as possible, using all available space.

The aluminum treadplate compartmentation tops on each side of the body shall be extended out and downwards a minimum of .50" over the compartment doors forming a drip rail. Corners shall be TIG welded.

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One (1)  
KK-03-0065

Lower or rear face compartments, if specified shall be provided with polished aluminum drip rails.

### **HINGED COMPARTMENT DOOR CONSTRUCTION**

All hinged compartment doors shall be of the flush style so that the entire door fits flush against the apparatus body sides. Doors shall be designed, in the closed position, to have the painted edges protected from damage on the tops by forming the treadplate compartment tops into a extended drip edge, on the bottoms by the rub rail.

Doors shall be a minimum 2" thick, fabricated of a minimum of .125 smooth aluminum. Full panel inner compartment door liners shall be provided and constructed of smooth aluminum. The compartment doors shall have a foam panel glued in place between the exterior and interior door skin. Exterior door panels shall be smooth with no welds visible on the exterior skin. Double door compartments shall be equipped with a secondary latch to hold the secondary door in position.

All compartment door hinges shall be full-length piano type constructed of a minimum 14-gauge type 304 polished stainless steel with 3/16" stainless steel hinge pin with dual directional bolt holes for ease of adjustment.

When horizontally hinged lift-up doors are specified, they shall be equipped with heavy-duty gas filled props to hold the doors in the open position. All other hinged doors shall be equipped with spring loaded hold open device specifically designed for use on vertically hinged doors. Door holders shall be bolted in position. The door ajar switches shall be fully enclosed within structural members and shall not extend into the clear door opening.

All compartment doors shall be provided with hollow core weather stripping to provide a weather tight seal at the door opening and to prevent road spray and debris from entering the compartment.

One (1)  
KK-03-0076

### **EXTERIOR DOOR LATCHES**

Side exterior compartment doors shall be furnished with a large stainless steel spring loaded D-handle with slam type latches. D-handles shall have the large "bent" D-ring for ease of grabbing the handle even when wearing mitts or gloves.

A non-moisture absorbing gasket shall be installed between the door latch and the door skin panel.

One (1)  
KK-03-2100

### **DRIVER SIDE COMPARTMENTS**

Three body compartments shall be furnished as follows:

- One compartment ahead of the rear wheels with full height single hinged door.
- One compartment above rear wheel with one lift-up door.
- One compartment behind the rear wheels with full height single hinged door.

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One (1)  
KK-04-0500

### **PASSENGER SIDE COMPARTMENTS**

Two lower body compartments shall be furnished as follows:

- One compartment ahead of the rear wheels with single hinged door.
- One compartment behind the rear wheels with single hinged door.

One (1)  
KK-50-0580

### **REAR BODY CONFIGURATION**

Rear apparatus body compartments shall be as follows:

- There shall be one lower compartment with double hinged doors.
- There shall be one upper compartment with a lift-up type door.

The rear lower compartment doors shall be as wide as possible.

The upper compartment to be as large as possible.

A bolt-in aluminum vertical divider shall be provided in the center of the rear compartment.

One (1)  
KK-50-4200

### **FLAT BACK BODY**

The rear vertical surface of the body shall be flat from side to side.

One (1)  
KM-49-1002

### **EXTERIOR COMPARTMENT FLOOR COVERING**

All enclosed compartment floors with exterior opening doors on the apparatus body shall be covered with black colored rigid Turtle Tile for improved ventilation and added scuff protection for the compartment floor.

One (1)  
KM-49-1004

### **SHELF FLOOR COVERING**

All shelving in compartments with exterior opening doors on the apparatus body shall be covered with black colored rigid Turtle Tile for improved ventilation and added scuff protection for the compartment floor.

Three (3)  
KM-49-1604

### **ADJUSTABLE SHELVES**

Compartment shelves shall be constructed of .125" smooth Aluminum. Shelves shall have formed edges on three sides for added strength. Shelves shall be fully adjustable, with extruded aluminum unistrut channels provided on the front and rear compartment walls.

Three (3) adjustable shelves shall be provided and located as follows:

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One (1) adjustable shelf shall be provided in the shall portion of the compartment in front of the rear wheels on the driver's side of the body (L1),

One (1) adjustable shelf shall be provided in the shallow portion of the compartment behind the rear wheels on the driver's side of the body (L3),

One (1) adjustable shelf shall be provided in the shall portion of the compartment in front of the rear wheels on the passenger's side of the body (R1).

Three (3)  
KM-49-1615

### **SLIDE-OUT TRAY**

Slide-out trays shall be constructed of 3/16" aluminum material. Trays shall have with heavy-duty roller bearing slides with a latch to hold the tray in the "open" and "closed" positions. Tray shall have capacity of 500 pounds.

Three (3) slide out trays shall be provided as follows:

Two (2) slide-out trays shall be provided in the deep portion of the compartment in front of the rear wheels on the driver's side of the body (L1). One tray shall be floor mounted and the other tray shall be adjustable,

One (1) slide-out tray shall be provided in the compartment behind the rear wheels on the passenger's side of the body (L3). The tray shall be provided for the specified generator.

One (1)  
KM-49-1630

### **PLYWOOD ON BACK WALL OF COMPARTMENT**

There shall be plywood panel furnished on the back wall of the compartment for mounting equipment. The panel shall be 3/4" marine grade plywood, and be bolted to the back wall of the specified compartment. The plywood shall have a clear coat finish applied.

The plywood shall be located in the upper portion of the compartment behind the rear wheels on the driver's side of the body (L3).

Two (2)  
KM-50-0100

### **DRIVER SIDE AIR BOTTLE COMPARTMENTS IN WHEELWELL**

SCBA storage compartment shall be provided and located in the driver side rear wheel well of the apparatus body. Compartment door and frame shall be constructed entirely of cast aluminum and have hinged style door. The compartment bottom and rear wall shall be lined with rubber material to protect paint finish of the air cylinder.

Two (2) SCBA storage tubes shall be provided on the driver's side of the body.

Two (2)  
KM-50-0250

### **PASSENGER SIDE AIR BOTTLE COMPARTMENTS IN WHEELWELL**

SCBA storage compartment shall be provided and located in the passenger side rear wheel well of the apparatus body. Compartment door and frame shall be constructed entirely of cast aluminum and have hinged style door. The compartment bottom and rear wall shall be lined with rubber material to protect paint finish of the air cylinder.

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Four (4)  
KM-50-1300

Two (2) SCBA storage tubes shall be provided on the passenger's side of the body.

### SCBA BRACKETS

SCBA mounting bracket(s) shall be provided and mounted in the enclosed storage compartments as per instructions of Fire Department.

Four (4) SCBA mounting brackets shall be provided and mounted to Unistrut adjustable channels on the back wall of the compartment over the rear wheels on the driver's side of the body (L2).

One (1)  
KR-01-0100

### EXTRUDED ALUMINUM RUB RAILS

Full body length polished aluminum rub rails shall be bolted in place on the right and left body sides and in the pump panel area. The rub rails shall extend outward beyond the body sides for protection of the compartments and doors. There shall be a bolt on aluminum corner casting on each rear corner to blend the rear tailboard assembly with the side rub rails.

The side rub rails shall be a heavy extruded aluminum "C" channel.

One (1)  
KR-04-0002

### SIDE AND REAR OVERLAYS

Overlay panels shall be constructed of 3003 polished aluminum treadplate. Polished aluminum overlay shall be provided and installed in the following areas:

- The front face of each side compartment.
- The rear body face and vertical area above tailboard and below hose bed.
- Driver's side and passenger compartment top extending down over side to the compartment doors then forming a drip rail above doors.
- Front face of hose bed above booster tank.

Overlay shall be installed with "Aluminized" stainless steel bolts to prevent corrosion.

One (1)  
KR-04-0010

### POLISHED COMPARTMENT TOP WELDS:

The compartment top welds to be polished.

One (1)  
KR-04-3000

### SLIP-RESISTANT WALKWAY SURFACE

All exterior surfaces designated as stepping, standing, and walking areas shall have an aluminum slip-resistant overlay material installed. The slip-resistant overlay material shall have a raised serrated surface that will allow moisture to drain out either side. The recessed surface shall be one piece solid material to prevent road spray and debris from entering the top surface from below. The slip-resistant overlay material shall meet the requirements of NFPA 13-7.3. The slip-resistant surface shall be installed in the following areas of the apparatus body:

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- Step areas of the side running boards.
- Rear step running board step.
- Walkway and standing platforms

One (1)  
KR-04-4902

### REAR STEP/RUNNING BOARDS

The apparatus body running boards and rear step shall be constructed with slip-resistant surface and shall have bright aluminum treadplate trim around the outside edges. Side running boards and rear step shall be removable for ease of service in case of damage.

One (1)  
KR-04-4904

### REAR STEP/TAILBOARD

A single piece .188 rear step/tailboard shall be furnished that is a minimum of 8.00" deep and full width of the apparatus body, from rub rail to rub rail. The tailboard shall be provided with a removable casting on each corner for a pleasing appearance.

One (1)  
KR-04-4918

### SLIDE-OUT PUMP OPERATOR'S PLATFORM BELOW REAR STEP

A slide-out step/standing platform shall be provided below the rear step platform. The slide-out step/standing platform is to include heavy-duty self-locking roller bearing slides. Step shall have slip resistant surface.

One (1)  
KR-10-0000

### HANDRAILS

Access handrails shall be 1 1/4" in diameter extruded aluminum with rubber insert. Access rail escutcheons and brackets shall be chrome plated and attached with stainless steel bolts. Anchoring of posts and framing members for railings of all types shall be of such construction that the completed railing structure shall be capable of withstanding a load of at least 225 pounds applied in any direction at any point along the rail.

One (1)  
KR-10-0100

### REAR HANDRAILS

Two (2) vertical access handrails shall be provided and mounted on the rear of the apparatus body, one on each side. Each rear handrail to be approximately 48" long.

Ten (10)  
KS-01-0100

### FOLDING ACCESS STEPS

NFPA approved folding steps shall be provided and mounted as listed below. All access steps shall have a minimum surface area of 35-square inches, and have a slip-resistant standing surface. The step shall be capable of supporting a 500-lb. load.

Folding steps shall be located as follows:

Three (3) on the front wall of the compartments on the driver's side of the body.

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One (1) on the front wall of the compartments on the passenger's side of the body.

Six (6) on the rear of the body. Exact locations shall be determined prior to construction.

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One (1)  
NA-00-0010

### **ELECTRICAL**

Electrical wiring, hydraulic lines, air system tubing, and control cables shall be fastened to the frame or body structure of the apparatus and shall be furnished with protective looms, grommets, or other devices, so that any such connector and/or wiring will be protected from shear or tear.

The body 12-Volt electrical system shall be designed specifically for the apparatus body. Automatic reset circuit breakers shall be provided and installed in all circuits.

Wiring data shall be provided with the completed apparatus.

The following electrical equipment and lights shall be provided and installed:

One (1)  
NA-00-0080

### **WIRING SYSTEM**

All electrical wiring shall be 14-gauge heavy strand copper with type GXL crosslink high temperature insulation, being circuit function printed every three-inches along its entire length.

Wiring data shall be provided with the completed apparatus.

The following electrical equipment and lights shall be provided and installed:

One (1)  
NA-00-1000

### **TAIL & STOP LIGHTS**

Two (2) Weldon #2010 rectangular red stop/tail lights shall be provided and mounted at the rear of the body, one on each side.

One (1)  
NA-00-2500

### **DIRECTIONAL LIGHTS WELDON 2010**

Two (2) Weldon #2010, rectangular amber directional signal lights with black arrows shall be provided and mounted at the rear of the body, one on each side below the stop/tail lights.

One (1)  
NA-00-4000

### **BACKUP LIGHTS WELDON 2010 (RECT)**

Two (2) Weldon #2010, rectangular clear backup lights shall be provided and mounted, one on each side at the rear of the body. The backup lights shall be mounted below the rear stop/tail and directional lights.

One (1)  
NA-00-5300

### **CLEARANCE LIGHTS**

There shall be clearance marker lights installed meeting all DOT requirements. The vehicle clearance lights shall be recess mounted within the rear center tailboard step.

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One (1)  
NA-00-5400

### **LICENSE PLATE BRACKET**

A license plate mounting bracket shall be provided complete with a chrome-plated shielded indirect type light. Bracket shall be mounted at the rear of the apparatus body.

One (1)  
NA-00-5600

### **BACKUP ALARM**

An automatic, electronic reverse alarm shall be provided and installed. An alarm shall activate whenever the reverse gear is selected in the transmission.

One (1)  
NA-00-6300

### **LOAD MANAGER**

The apparatus shall be equipped with a Kussmaul model 091-79 Automatic Load Shedding System for performing continuous electrical load management. The Load Manager shall have the following features:

- Monitor 12-volt system and detect low voltage.
- Capability to control two (2) loads.
- Automatic reset when voltage rises.
- Adjustable voltage setpoint.

The load manager shall be protected against reverse polarity and shorted outputs, and be enclosed in a enclosure to enhance EMI/RFI protection. CSFA shall provide for all electrical loads in excess of the NFPA minimum electrical requirements that exceed the alternator output.

One (1)  
NA-00-7000

### **HIGH IDLE SYSTEM**

There shall be a high idle system furnished and installed on the apparatus. The high idle system shall have an on/off switch located in the chassis on the switch console. The system shall have an interlock that will disable the solenoid if the parking brake is not completely set.

One (1)  
NA-01-1000

### **COMPARTMENT LIGHTING**

All side and rear exterior equipment compartments shall be provided with one (1) clear compartment light mounted to the top of the compartment ceiling. Compartment lights shall switch on automatically when the compartment door is opened and switch off when the door is closed.

Three (3)  
NA-01-1100

### **ADDITIONAL COMPARTMENT LIGHTS**

Additional sealed lights shall be provided and installed for compartments with shelves, as directed by the Fire Department. Additional lights shall be mounted to a bracket attached to the unistrut shelf standard. Lights mounted to the shelf brackets shall have additional wire to allow the light

## Rosenbauer – Central States Division

to be adjusted with the shelf. Lights shall be wired to switch on and off with the automatic door jamb switch.

The lights shall be installed under each adjustable shelf provided.

One (1)  
NA-01-3000

### **OPEN COMPARTMENT/HAZARD WARNING LIGHT**

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

One (1)  
NB-02-5200

### **BATTERY DISCONNECT SWITCH**

A master battery on/off switch shall be provided and mounted in a convenient location to the driver. The master battery switch shall disconnect the batteries from all chassis and body accessories.

A "Battery-On" pilot light shall be provided, visible to the driver.

One (1)  
NB-02-6000

### **BATTERY CONDITIONER**

A 110-volt Kussmaul Auto-Charge 12, single system, 12-amp automatic battery charger shall be provided and installed within the chassis cab and wired to the battery system. Battery charger shall be designed to automatically charge the battery system when shoreline power is connected. The charger shall be equipped with an amp meter on the face of the charger to indicate the charge rate, and a remote voltage sensing device to compensate the charger output for the voltage drop in the charging wires.

One (1)  
NB-02-7620

### **AUTO-EJECT**

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

One (1)  
NB-02-9200

### **ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL**

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

## Rosenbauer – Central States Division

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

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

One (1)  
NB-03-2400

### MAP LIGHT

One (1) flexible "gooseneck" type map light shall be provided and mounted on the cab dash panel complete with a switch on the light fixture base.

The light shall be mounted on the passenger's side.

One (1)  
NB-03-2600

### SPOTLIGHT

One high intensity hand held spotlight shall be provided and mounted in the chassis cab on the passenger side and wired to the chassis 12-volt system. Spotlight shall be "Blue Eye" type.

One (1)  
NB-10-5000

### REAR STEP LIGHTS

Two (2) chrome plated lights shall be furnished and installed on the rear face of the body to illuminate the rear step area. Lights shall be wired to the panel light switch at the pump operator's panel.

One (1)  
NB-10-5400

### ENGINE COMPARTMENT WORK LIGHT

An engine compartment work light shall be provided complete with a switch mounted on the light head.

One (1)  
NB-10-5600

### PUMP COMPARTMENT WORK LIGHT

A pump compartment work light shall be provided and installed within the pump compartment area complete with a switch mounted on the light head.

One (1)  
NB-10-6100

### UNDER CAB LIGHTING

There shall be four (4) lights furnished below the chassis cab, one on each side below each door. The lights shall be wired to switch on and off automatically when the cab doors are opened.

One (1)  
NB-10-6800

### UNDER BODY LIGHTING

There shall be two (2) lights furnished below the pump house running board, one on each side. The lights shall be wired to turn on and off with a switch located on the pump operator's panel.

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One (1)  
NB-10-6900

### **UNDER BODY LIGHTING REAR STEP**

There shall be two (2) lights furnished below the rear step, one on each side. The lights shall be wired to turn on and off with a switch located on the pump operator's panel.

One (1)  
NB-30-0200

### **REAR DECK LIGHTS**

Two (2) Unity #AG series, chrome-plated, six-inch rear mounted lights with swivel type mounting bracket and individual switches shall be provided.

One light shall be a **35-watt 75,000 candlepower spot** lamp, and one light shall be a **35-watt 1,100 candlepower flood** lamp.

One (1)  
NB-30-9000

### **AUTOMATIC REAR SCENE LIGHT SWITCHING**

The rear scene lights shall be wired to automatically switch on with the backup lights when the transmission is placed into the reverse gear.

Two (2)  
NB-40-1200

### **REAR SIGNAL BUTTON**

A push button switch, accessible from the rear step, for signaling the driver shall be furnished and wired to the vehicle's electric horn.

Push buttons shall be provided at the rear on both sides.

One (1)  
NC-02-9010

### **AIR HORNS**

Two (2) chrome-plated Grover "Stuttertone" air horns shall be provided and recess mounted in the front bumper extension. A pressure protection valve to prevent the use of air horns or other air operated accessories when the system air pressure drops below 80 psi shall be provided.

Air horns shall be controlled from the following switch positions.

One (1)  
NC-02-9028

One (1) push button switch shall be provided on the center console for activation of the air horn.

One (1)  
NC-02-9040

### **HORN SELECTOR SWITCH**

An air horn/horn selector switch shall be provided and mounted on the switch console to select activation of the chassis horn, or the air horns.

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One (1)  
NC-03-2000

### **ELECTRONIC SIREN**

A Code 3 Model 3692 V-CON, 200-watt electronic siren with Hi-Lo and hardwired microphone shall be provided and mounted in the cab.

One (1)  
NC-03-5100

### **SPEAKER**

DYNAMAX, 100-watt speaker shall be provided and recess mounted in the front bumper of the chassis. The speaker shall be connected to the electronic siren control unit.

One (1)  
NC-04-2900

### **RED LIGHT**

There shall be a steady burning red light furnished on the chassis cab.

The light shall be provided to meet California DMV requirements.

One (1)  
NC-04-3200

### **HEADLIGHT FLASHER**

The headlight circuit of the chassis shall be provided with a heavy-duty headlight flasher system designed for emergency vehicles. Flasher shall include override for high beam headlights and controlled by switch located on the electrical module in the chassis cab. Headlight flasher to be turned off when the park brake is set.

One (1)  
NE-04-0950

### **EMERGENCY LIGHTING**

The upper and lower zones "A", "B", "C", and "D" of the apparatus shall have the following emergency lighting equipment:

One (1)  
NE-04-4200

### **LIGHT BAR**

One (1) Code 3 model 556A3 56" mounted on chassis cab roof to meet the NFPA upper zone A lighting requirement. Light bar to have the following equipment.

- (4) 50-watt standard rotators
- (1) 50-watt fast rotators
- (2) diamond mirrors
- (2) 2-step cascade mirrors

One (1)  
NE-05-0100

### **REAR LIGHTS**

Two (2) Code 3 model 550F rotating lights mounted on the rear of the apparatus body to meet the NFPA Zone B, C, D upper level lighting requirement. The lights shall be activated through the master emergency light switch located on the electrical console. Each light to have the following equipment.

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- (1) 50-watt fast rotator
- 1 Red lens / 1 Amber lens

The driver's side light to have the amber lens.

One (1)  
NE-05-1220

### **UPPER ZONE "B, C, D" LIGHT MOUNTING**

The upper rear lights designated for Upper Zone "B" shall be mounted on cast aluminum stanchions attached to the apparatus body, one on each side.

One (1)  
NE-05-2500

### **ZONE A FRONT LIGHTS**

There shall be two (2) Code 3 model 40 strobe lights furnished on the front grill to meet the NFPA Zone A lower level lighting requirement. The strobe lights shall be connected to a power supply and be activated through the master emergency light switch located on the electrical console.

One (1)  
NE-05-4210

### **ZONE B & D SIDE LIGHTS**

There shall be two (2) Code 3 model 40 strobe lights furnished on each side of the apparatus to meet the NFPA Zone B & D lower level lighting requirement. One light mounted as far forward as possible and one light mounted as far to the rear as possible. The lights shall be connected to a power supply and be activated through the master emergency light switch located on the electrical console.

One (1)  
NE-05-6800

### **ZONE C REAR LIGHTS**

There shall be two (2) Code 3 model 40 strobe lights furnished on the rear of the apparatus body to meet the NFPA Zone C lower level lighting requirement. The strobe lights shall be connected to a power supply and be activated through the master emergency light switch located on the electrical console.

One (1)  
NS-00-0100

### **12 VOLT ELECTRICAL CERTIFICATION**

The low voltage electrical system shall be tested and certified per NFPA 1901 requirements.

A certificate of compliance shall be provided with the completed vehicle upon delivery.

Minimum electrical load consists of the total amperage required to simultaneously operate the following in a stationary mode at the incident scene.

- The propulsion engine and transmission.
- All Clearance and marker lights.
- The communication radio. (Default of 5.0 amps used for testing).
- Illumination of all walking surfaces, the ground at all egress points, controls and instrument panels and 50% of the total compartment lighting load.
- Minimum warning lights required for "Blocking Right of Way" mode.

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- The current to simultaneously operate any fire pump, aerial device & hydraulic pumps.
- Anything defined by the purchaser to be critical to the mission of the apparatus.

The first test for the electrical system is the **Reserve Capacity Test**. All the above listed components operate with the engine shut off. After 10 minutes all electrical loads are shut off and the battery system must have adequate reserve power to start the engine.

The second test is the **Alternator Performance Test at Idle**. All the above listed components operate with the engine at an idle. There can be no current draw from the batteries of the apparatus.

The third test is the **Alternator Performance Test at Full Load**. All electrical components shall be activated with the engine operating at governed RPM for two hours. During the test the system voltage can not drop below 11.7-volts or have excessive battery discharge for more than 120 seconds. Any loads not listed in the minimum electrical load may be load managed in order to pass the test.

All of the above tests must be conducted with the engine compartment at approximately 200 degrees.

One (1)  
OA-35-0002

### GENERATOR

A Honda EM-3500SXX1, 3500-watt, 120/240-volt generator shall be provided. The unit shall have an air cooled 8HP gasoline engine equipped with low oil pressure shutdown. The unit shall be three wire, single phase 60-hz with full rated power available from a single 120-volt outlet. The oil drain, oil dip stick, fuel filter and oil filter for the generator must be easily accessible for maintenance.

An integral 4.5-gallon fuel tank, with electric and recoil starter shall be furnished with the generator.

Electric start provisions shall be furnished for the generator from the chassis battery system. Generator start/stop switch shall be provided at the generator.

One (1)  
OA-35-0104

### CIRCUIT BREAKER PANEL

A circuit breaker panel shall be provided and mounted with two (2) manual reset circuit breakers properly labeled.

A portable generator shall be connected to the circuit breaker panel with S/O cord and quick disconnect plug. A permanent mount generator shall be hard wired to the circuit panel.

The circuit breaker panel shall be located in a compartment as close to the generator as practical, and mounted to not interfere with shelves or trays if specified. Breaker panel cover shall be accessible with hand tools.

One (1)  
OA-35-0115

The electrical wiring shall be fine stranded copper type THHN, sized to load and circuit breaking rating. The wiring shall be color coded and encased in a thick rubber casing.

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One (1)  
OA-35-0130

### **GENERATOR MOUNTING**

The generator shall be mounted in the right rear lower compartment

Two (2)  
OA-42-0010

### **TELESCOPING QUARTZ LIGHTING**

A quartz light shall be provided and mounted on the apparatus, wired to the 110-volt power source. The light shall be UL listed as "Scenelights for Fire Service Use". Light shall be controlled by a switch located on the light head.

Light shall be a Fire Research 500W/110V Nightmaster, model LTA-530-S50.

The light shall be attached to a side mounted, bottom raise telescoping, anodized aluminum pole. The telescoping pole shall have a thirty-inch extension with friction lock mechanism. The telescoping pole shall be prewired with heavy-duty retractile cord with pigtail extending out the bottom of the lower tube.

The lights shall be mounted at the rear of the body, one on each side.

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One (1)  
PA-01-0002

### PAINTING

All bright metal fittings if unavailable in stainless steel shall be heavily chrome-plated. Iron fittings shall be copper plated prior to chrome plating.

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

The body and all parts shall be thoroughly washed with grease cutting solvents prior to any sanding. After the body has been sanded and the minor imperfections filled and sanded, the body shall be washed again with a solution to remove any contaminants on the surface. The first coating to be applied is a self-etching primer for maximum adhesion to the body metal. The next three coats shall be an acrylic, urethane, primer surfacer. The primer surfacer coat is to be hand sanded with 600-grit sandpaper to insure maximum gloss of the paint. The last step is the application of at least three coats of Concept Acrylic Urethane two component color.

The fire pump and all rigid discharge and suction plumbing shall be painted silver in color.

While constructing the truck body, all aluminum parts shall be properly fitted on the body. The backside of all aluminum parts shall be sanded smooth of any burrs and sharp edges.

All aluminum parts shall be bolted to the body using stainless steel fasteners. Cadmium plated fasteners are not acceptable.

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

One (1)  
PA-01-0200

### UNDERCOATING

The body sub frame shall be undercoated with a heavy-duty automotive type undercoating before the rubber backing and the compartments are attached. After the body has been attached to the sub frame and all final items have been installed the entire body assembly shall be undercoated

One (1)  
PA-01-1515

### INTERIOR COMPARTMENT PAINT

The interior vertical compartment walls are to be painted white with a black colored spatter finish material.

One (1)  
PA-01-3500

### WHEEL PAINTING

The exterior faces of the front and rear wheels, shall be finished painted to match the apparatus body. Wheels shall be properly prepared and finished with primer coats and topcoats as specified.

The outer two-inches of each outside wheel rim shall be painted Silver in color, unless otherwise specified.

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One (1)  
PA-01-5500

### **TWO TONE CAB PAINT**

The chassis cab exterior shall be two-tone finish painted. The area to be painted shall be sanded and thoroughly prepared then refinished with PPG Concept paint.

The chassis shall be ordered red from the manufacturer. The cab roof only is to be painted white.

The exact colors shall be determined prior to construction.

One (1)  
PA-02-1910

### **LETTERING**

Lettering shall be done in gold leaf mylar letters, shaded in black, and encapsulated in clear mylar. Lettering to be placed on each cab door as directed by fire department. Maximum of fifty (50) letters.

One (1)  
PA-02-2600

The lettering shall match the Fire Department's existing apparatus.

One (1)  
PA-02-3500

### **GOLD LEAF STRIPING**

Striping to be gold leaf mylar with black shading placed on both sides of the apparatus body. Striping to be applied to outer perimeter of body and have four (4) scrolls on each side.

One (1)  
PA-02-5200

### **REFLECTIVE SAFETY STRIPE**

A 6" wide 3M brand Scotchlite #680-10 reflective stripe shall be affixed to the perimeter of the vehicle. Striping shall be placed up to 60" above ground level and shall conform to NFPA reflectivity requirements. At least 60% of the perimeter length of each side and width of the rear, and at least 40% of the perimeter width of the front of the vehicle shall have reflective stripe.

The side stripe shall be applied in a Large "S" design.

The stripe shall be white in color.

The striping shall match the fire department's existing apparatus.

One (1)  
PC-00-0100

### **IDENTIFICATION & SAFETY LABELS**

A permanent plate shall be installed in the driver's compartment to specify the quantity and type of the following fluids in the vehicle:

1. Engine oil.
2. Engine coolant.
3. Transmission fluid.
4. Pump Transmission Lubrication Fluid.
5. Pump Primer Fluid (If applicable).

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6. Drive Axle Lubrication Fluid.
7. Air-conditioning refrigerant.
8. Air-conditioning lubrication oil.
9. Power steering fluid.
10. Transfer case fluid.
11. Equipment rack fluid.
12. Air compressor system lubricant.
13. Generator system lubricant.

When trucks have been UL certified, a permanent plate with pump performance data and serial numbers shall be installed on the pump panel.

A permanent plate shall be installed in the driver's compartment specifying the maximum number of personnel the vehicle is designed to carry per NFPA standards. It shall be located in an area visible to the driver.

An accident prevention sign stating "DANGER PERSONNEL MUST BE SEATED AND SEAT BELTS MUST BE FASTENED WHILE VEHICLE IS IN MOTION OR DEATH OR SERIOUS INJURY MAY RESULT". The warning sign shall be placed so it is visible from all seating positions.

An accident prevention sign stating "DANGER DO NOT RIDE ON REAR STEP WHILE VEHICLE IS IN MOTION, DEATH OR SERIOUS INJURY MAY RESULT". The warning sign shall be placed so it is visible from the rear step of the vehicle.

If an inlet located at the pump operator's position is valved, it shall be provided with a permanent label that states "WARNING SERIOUS INJURY Or DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".

One (1)  
TA-01-0100

### **OPERATION / SERVICE MANUALS**

The manufacturer shall provide with the vehicle upon delivery, one (1) complete delivery manual. These manuals shall be in a notebook type binder, with reference tabs for each section of the vehicle. Within each section shall be:

1. Individual component manufacturer instruction and parts manuals.
2. Warranty forms for body.
3. Warranty forms for all major components.
4. Warranty instructions and format to be used in compliance to warranty obligations.
5. Wiring diagrams.
6. Installation instructions and drawings for major parts.
7. Visual graphics, electronic photos of installations of major parts.
8. Necessary normal routine service forms, publications and components of body portion of the apparatus.
9. Technical publications on training and instructions for major body components.
10. Warning and safety related notices for personnel protection.
11. Cab and chassis manuals on parts, service and maintenance shall be provided.
12. UL Pump Certification sheets, including the Manufacturer's Record of Apparatus construction details.
13. Certificate of Compliance to Electrical Warning System Low Voltage test.

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- 14. Line Voltage Electrical System test certificate.
- 15. Water tank capacity certificate.

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One (1)  
VA-00-0000

### **ADDITIONAL EQUIPMENT**

The following equipment shall be furnished by the apparatus body builder.

### **LADDERS**

One (1)  
VA-01-0400

A 24-foot, 2-section aluminum fire department extension ladder, ALCO-LITE Model PEL-24, shall be furnished.

One (1)  
VA-01-0425

A 14-foot aluminum roof ladder with folding hooks, ALCO-LITE model PRL-14, shall be furnished.

One (1)  
VA-01-0435

A 10-foot folding aluminum attic ladder, with mounting brackets, ALCO-LITE model FL-10, shall be furnished.

### **PIKE POLE**

One (1)  
VA-02-6000

10-foot pike pole with fiberglass handle and steel hook shall be furnished.

Two (2)  
VA-03-6000

### **HARD SUCTION HOSE**

A 10-foot length of 6" lightweight PVC, flexible fire department suction hose, first quality non-collapsible type, of a design having a low friction loss and which will not collapse under a vacuum of 23".

Hard suction hose to be equipped with lightweight couplings. Long handles on female and rocker lugs on male couplings.

Two (2) 6" x 10' lengths of suction hose shall be provided.

### **WHEEL CHOCKS**

One (1)  
VA-05-6800

A pair of heavy-duty aluminum wheel chocks shall be provided and mounted in underbody slide-out mounting brackets as directed by the fire department.

Both chock blocks shall be mounted under the body in front of the rear wheels on the driver's side.

One (1)  
VA-10-0099

### **DIGGER BAR**

A 54" digger bar (pry bar) shall be supplied with the apparatus.

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One (1)  
1B-00-0500

### **WARRANTY**

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

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

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

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

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

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

One (1)  
1B-00-2500

### **5 YEAR ALUMINUM BODY WARRANTY**

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

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

CENTRAL STATES FIRE APPARATUS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE ALUMINUM BODY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND HEREBY DISCLAIMED.

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

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

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

One (1)  
1B-00-3500

### PAINT WARRANTY

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

The areas as outlined on the Guarantee Certificate, will be covered for the following paint failures:

#### GUARANTEE INCLUSIONS:

FULL APPARATUS BODY MANUFACTURED AND PAINTED BY CENTRAL STATES FIRE APPARATUS:

- \* Peeling or delamination of the topcoat and/or other layers of paint.
- \* Cracking or checking.
- \* Loss of gloss caused by cracking, checking, or hazing.
- \* Any paint failure caused by defective PPG Fleet Finishes which are covered by this guarantee.

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

One (1)  
1B-01-1000

### SUBFRAME WARRANTY

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

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

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

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

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