

VS003 The FireTruck
WS Darley



FIRE APPARATUS SPECIFICATIONS

1500 GPM Vision CAFS Pumper

Darley VS003

"TheFireTruck"

For

Department Name

City, State

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00-00-6000

GENERAL INFORMATION

These specifications are a detailed description of the apparatus, and equipment (if specified), to be furnished by W.S. Darley & Co. and is intended to outline the quality and design of the apparatus desired. The apparatus covered by this specification shall be new, unused, and the latest production design and that which is furnished to Fire Departments in general. This apparatus shall be constructed in its entirety within the continental United States.

00-00-9500

THANK YOU

Thank you for the opportunity to present these specifications. Our company looks forward to working with you, to provide the best service possible, and the best product possible, as detailed within these specifications.

00-01-0000

FIRE APPARATUS SPECIFICATIONS

00-05-1000

PRODUCT QUALITY AND WORKMANSHIP

The components provided and workmanship performed shall be of the highest quality available for this application. Special consideration shall be given to the following areas:

- A). Accessibility to various components that require periodic maintenance or lubrication checks.
- B). Ease of vehicle and pump operation.
- C). Features beneficial to the intended operation of the apparatus.

Construction of the complete apparatus shall be designed to carry the loads intended to meet the road and terrain conditions and speed requirements desired when specified by the purchaser. Welding shall not be employed in the assembly of the apparatus in a manner that will prevent the removal of any major component part for service and/or repair.

00-10-1000

NFPA COMPLIANCE

The apparatus detailed herein shall meet applicable NFPA recommendations current at the time of the proposal.

00-15-0600

PAYMENT REQUIREMENTS

00-16-1500

Payment for the value of the chassis shall be made to Darley upon chassis completion and invoicing by Darley.

The balance of the contract shall be paid in full upon completion of the apparatus at the Darley facilities and invoicing by Darley.

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00-38-0300

DELIVERY REQUIREMENTS

00-39-4200

DELIVERY AFTER CONTRACT

The completed apparatus shall be ready for delivery within approximately _____ calendar days, following the signing of a contract by the purchaser, and the counter-signing of the same contract by Darley.

00-39-2200

F.O.B. DARLEY

The completed apparatus shall be picked up by the customer, at the Darley manufacturing facility in Chippewa Falls, Wisconsin.

00-42-0500

PRECONSTRUCTION MEETING

00-42-0750

There is no preconstruction meeting specified for this apparatus.

00-45-0750

INSPECTION TRIPS

There are no inspection trips specified for this apparatus.

00-50-0600

DRAWING REQUIREMENTS

00-50-4000

CONSTRUCTION APPROVAL DRAWINGS

Prior to construction, two (2) sets of apparatus drawings shall be supplied to the purchaser. The drawings shall include left side, right side, top, front and rear views of the apparatus.

Critical dimensions such as overall height, overall length, body width, cab dimensions, pump module dimensions (when applicable), compartment dimensions, and overall body dimensions shall be on the drawings.

Water tank size (when applicable) and pump gpm (when applicable) shall also be stated on the drawings.

The purchaser shall review the drawings. Any discrepancies and/or mutually agreed upon modifications shall be noted on the drawings. The purchaser shall return one complete set of drawings, with authorized approval signature(s), to the Darley representative.

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00-55-0700

WARRANTY REQUIREMENTS

00-55-1400

WARRANTY

The following warranties shall be provided:

00-60-2200

ONE YEAR DARLEY APPARATUS WARRANTY

The Darley apparatus detailed herein shall be warranted against defects in materials and workmanship for a period of twelve (12) months, effective upon pick up or delivery of the apparatus to the destination.

NOTE: Warranty details available.

00-60-4600

DARLEY FIRE PUMP WARRANTY

Upon pick up or delivery of the apparatus, for a period of six (6) years, the Darley Company guarantees to replace any defective part or parts in the Champion pump. This Champion pump is guaranteed to deliver the performance as specified on the certification label.

NOTE: Warranty details available.

00-60-5500

LIFETIME TANK WARRANTY

Pro Poly of America, Inc., warrants to the original owner of the apparatus the Tank to be free from defects in material and workmanship for the normal service life of the apparatus in which the Tank is installed.

NOTE: Warranty details available.

00-61-7055

COPOLYMER BODY WARRANTY

PolyBilt Body Company, LLC warrants to the original owner of the apparatus, the Body to be free from defects in material and workmanship, free from rust and corrosion for twenty years (20).

NOTE: Warranty details available.

00-62-2500

FIVE YEAR DARLEY COPOLYMER BODY PAINT WARRANTY

Darley hereby warrants to the original Purchaser, the finish paint on the copolymer body, shall be free of defects and blisters and further warrants that it will maintain such integrity and shall not result in unreasonable gloss or color loss, for a period of five (5) years following the date the apparatus leaves the Darley facility.

NOTE: Warranty details available.

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00-65-0600

DEMONSTRATION REQUIREMENTS

00-65-5500

DEMONSTRATION AT DARLEY

While purchaser personnel are present at the Darley manufacturing facility, Darley shall provide a one day demonstration session on the completed apparatus. Demonstration shall be conducted by a minimum of one Darley authorized and trained individual. Demonstration shall include all aspects of apparatus operation.

00-68-0500

MANUAL AND DATA REQUIREMENTS

00-68-4500

FIRE APPARATUS DOCUMENTATION

At the time of delivery, Darley shall supply two (2) copies of the construction details and appropriate manuals.

00-80-0500

CHASSIS PROVIDER

00-80-2000

The chassis, as detailed in these specifications, shall be ordered and supplied by Darley. The chassis portion of the contract shall be paid for as detailed in the Darley proposal and contract verbiage.

00-99-2500

MANUFACTURER RIGHTS

The Darley Company reserves the right to incorporate the latest technology or standards, including changes to apparatus features and brand names, or model or equipment being supplied with the vehicle.

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05-00-1000

CHASSIS SPECIFICATIONS

Spartan Metro Star 4x2 (Rear Axle Drive Only)

MFD with 10" raised roof

GAWR Front 18000#

GAWR Rear 24000#

Data Recording System

Engine Diesel 380HP Cummins ISL9 - EPA 2013

Diesel Exhaust Fluid Tank LH 6 Gal Fill Thru Rr Step

Fuel Tank 50 Gallon

Front Tire 315/80R 22.5 Goodyear G291

Rear Tire 11R 22.5 Goodyear G661 HAS

Front and Rear wheels - Alcoa Aluminum

Brake System ABS/ATC/ESC

Wheelbase 192.0"

Seat Driver Seats Inc Battalion 2-Way Manual ABTS

Occupant Protection Driver-Officer-Crew Advanced Protection System

Seat Officer Seats Inc Battalion 2-Way Manual ABTS SCBA Zico ULL Bracket w/LLS Strap

Seat Rear Facing Outer (2) R/L - Seats Inc Battalion Fixed SCBA Zico ULL Bracket w/LLS Strap

Seat Crew Forward Facing Center (2) - Seats Inc Battalion Flip-Up SCBA Zico ULL Bracket w/LLS Strap

Helmet Storage Ceiling (6)

Battery Conditioner Kussmaul 1200 Left Hand Rear Facing Outboard Seat Position

Electrical Inlet 120 Volt 20 Amp Auto Eject Left Hand Cab Side Forward (Yellow)

Front Turn Signals Whelen 600 LED

Ground Lights LED

Step Lights LED

Cab Roof Light bar Front Whelen Freedom FN72QLED 6R2C Layout 1

Map Light Roxter Right Hand Dash

Siren Control Head Whelen 295HFSA7

Radio: Jensen WB/AM/FM/CD/iPod/Sat Overhead Right

Rear Camera with Color Monitor

Occupant Protection Advanced Protection System

Cab Paint Exterior Single Color

Cab Paint Manufacturer PPG

Cab Paint Primary/Lower Color PPG Red FBCH 911072

Cab Paint Int Zolatone Silver Gray

Cab Entry Doors (4)

Elec System 12 Volt DC

Aux Engine Brake VG Turbo

Engine Fan Drive Clutch

Transmission Allison 3000 EVS

Moisture Ejectors Auto Heated w/Cable

Front Bumper Extension Length 6"

Air Horns (2) 21" Round Hadley E-Tone Front Bumper Face R/L

Electric Siren Speaker 100W Cast Products SA4301 (1) Front Bumper Face Center

Climate Control Heater Defroster Overhead - A/C Tunnel Mount

Interior Color Gray

Mirror Aerodynamic Retractable 613315 Remote Heated Lighted

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Batteries (3) Group 31 Harris
Alternator Leece-Neville 270 Amp
Halogen Headlights (4)
Front Warning Lights Inboard Whelen 600 Super LED Red
Intersection Warning Lights Whelen 600 Super LED Red
Midship Cab Side Warning Lights Whelen 600 Super LED Red

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07-00-1000

CHASSIS MODIFICATIONS

The following modifications and installations shall be performed on the chassis upon delivery to the apparatus manufacturer:

07-27-0500

FUEL FILL & DOOR

The chassis fuel fill inlet line, from the rear mounted fuel tank, shall be routed to an area at the side of the body, behind the rear wheels. A fuel cap shall be provided. A cast aluminum access door assembly shall be mounted on the side of the body over the inlet area. A label designating the type of fuel to be used shall be installed on the door assembly.

07-30-0500

MASTER BATTERY SWITCH (Chassis Provided)

A master battery switch shall be provided as detailed in the chassis specifications.

07-31-0250

BATTERY CHARGER (Chassis Provided)

A battery charger shall be provided as detailed with the chassis specifications.

07-40-0500

COVER FOR TRANSMISSION SHIFT

A hinged clear Plexiglas type guard shall be installed over the transmission push button shift pad, to protect the push button controls when not in use, and to prevent accidental activation or shifting.

07-52-1000

FRONT MUDFLAPS

Two (2) black hard rubber mudflaps shall be installed behind the front wheels, one each side.

07-52-2000

REAR MUDFLAPS

Two (2) black hard rubber mudflaps shall be installed behind the rear wheels, one each side. The apparatus manufacturer's logo shall be on each rear mudflap.

07-80-0200

CHASSIS EXHAUST

The chassis exhaust pipe shall discharge at rear wheels as provided with the chassis. A heat shield shall be provided between the pipe and the bottom of the body compartment.

07-90-0750

BACK-UP ALARM (Chassis Provided)

One (1) electronic back up alarm shall be provided with the chassis. See the chassis specifications.

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07-95-0500

IDENTIFICATION DATA PLATE

An identification plate shall be installed in the driver's area of the cab, specifying the quantity and types of fluids used in the vehicle (as applicable):

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Pump transmission lubrication fluid
- Pump primer fluid
- Drive axle lubrication fluid
- Air conditioning refrigerant
- Air conditioning lubrication oil
- Power steering fluid
- Cab tilt mechanism fluid
- Transfer case fluid
- Equipment rack fluid
- Air compressor system lubricant
- Generator system lubricant

The ID plate shall also include the following:

- 1.) Build Date
- 2.) Delivery Date
- 3.) Paint Information
- 4.) VIN Number

07-95-2000

OCCUPANT PLATE

An identification plate shall be installed in the driver's area of the cab, specifying the quantity of personnel allowed to ride in the apparatus.

07-95-4000

TRAVEL HEIGHT AND GVWR LABEL

A "high visibility" plate shall be permanently mounted in the cab, visible to driver when seated.

The plate shall show the overall height of the completed apparatus in feet and inches (or meters), the overall length of the completed apparatus in feet and inches (or meters).

The plate shall also show the gross vehicle weight rating (GVWR) in pounds or kilograms.

Text shall also be supplied on the plate, indicating that the information shown is current upon completion of the apparatus. If the overall height of the apparatus changes after the apparatus is put into service, then the purchaser must revise the dimensions on the plate.

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09-00-0050

PUMP, MODULE, AND RELATED ITEMS

09-03-1000

NFPA 1901 COMPLIANT PUMP

The fire pump and related plumbing on the specified apparatus shall be installed in accordance with applicable NFPA 1901 guidelines at the time the contract was placed.

17-00-1000

SIDE DESIGN PUMP OPERATOR'S PANEL & MODULE

17-04-5000

SIDE PANEL MODULE

A pump operator's side panel pump module shall be provided. It shall be assembled and mounted independently from both the chassis and the body, to allow sufficient flexing and prevent component fatigue. The module shall be constructed using square aluminum tubing. The welded ends of the tubing shall be chamfered prior to welding and shall be ground smooth prior to finishing. All welded areas shall be ground smooth before finishing. The exterior module shall be sanded, prepped, and primed using the paint manufacturer's recommendations. The module structure shall be finish painted to match the primary body and chassis cab color. A heavy duty rubber isolation material shall be provided between dissimilar metals during the mounting process. The substructure shall be painted before mounting to the chassis frame.

17-10-2000

SIDE OPERATED PUMP PANEL

The pump operator's control panel shall be located on the left side of the pump module.

PANELS

The pump panels shall be removable.

TRIM RINGS (Unless Color Graphics side Panel Used)

All suction and discharge ports shall be fitted with removable polished stainless steel trim rings.

GAUGES AND CONTROLS

All controls and gauges shall be functionally grouped and installed to allow easy access for service and replacement. The central midpoint or center line of any control shall not exceed 72 inches vertically above the base of the operators standing position. Gauges (and/or flowmeters if present) shall be located as nearly adjacent to the valve control as possible. The height of all gauges shall not exceed 84 inches above the base of the operator's standing position.

17-10-5330

SIDE OPERATOR'S PANEL (INTEGRATED GRAPHICS)

The side operator's panel shall be a color coded panel design constructed from 1/8" exterior UV grade, custom graphic resin panels. The panel shall resist fading, cracking and be graffiti resistant. The panel shall be unaffected by temperature changes. The panel graphics shall be custom designed and digitally imprinted on the panels. Graphics shall include color coded trim around each discharge and intake control lever, any electric valve switches, all labeling, and operating instructions, and company logos.

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17-10-5335

UPPER GAUGE PANEL (INTEGRATED GRAPHICS)

The pump operator's upper gauge panel shall be a color coded panel design constructed from 1/8" exterior UV grade, custom graphic resin panel. The panel shall resist fading, cracking and be graffiti resistant. The panel shall be unaffected by temperature changes. The panel graphics shall be custom designed and digitally imprinted on the panel. Graphics shall include any labeling, operating instructions, and company logos. The panel shall be vertically hinged and shall have two latches.

17-10-5350

OPPOSITE SIDE PANEL - BLACK VINYL

The pump compartment side, opposite the pump operator's side, shall have a side pump panel constructed of black vinyl clad aluminum sheet. The side pump panel shall be removable.

17-35-3100

COLOR CODED LABELS

A set of color coded and function described labels shall be provided on the apparatus, for the gated inlets, discharge outlets, drains, and pressure gauges (as applicable).

The labels on the operator's panel shall be integral with the custom graphics panel.

Labels that are not integral with the panel shall be high quality durable plastic, mounted in an adhesive backed chrome plated bezel.

17-32-1000

PUMP PANEL LIGHT SHIELD (LED) LEFT

One (1) polished stainless steel light shield assembly shall be provided above the left side pump panel area. There shall be LED lights installed within the shield. A switch, located on the pump operator's panel shall be provided to activate the lights.

17-32-2000

PUMP PANEL LIGHT SHIELD (LED) RIGHT

One (1) polished stainless steel light shield assembly shall be provided above the right side pump panel area. There shall be LED lights installed within the shield. A switch, located at the pump operator's panel shall be provided to activate the lights.

17-32-2200

PUMP COMPARTMENT LIGHTS

Two (2) 5" round dome style lights shall be provided inside the pump compartment area. Each shall be switched on the light itself. The lights shall have a minimum 20 candlepower.

17-32-3000

RUNNING BOARDS

Running boards shall be installed on each side of the pump compartment module. The running boards shall be constructed of 1/8" embossed bright aluminum treadplate. Each shall be a minimum of approximately 11" deep x the width of the side panel module. The running boards shall have a 1-1/4" upward bend on the inside edge to act as a kick plate. The aluminum treadplate shall meet recommendations for slip resistant surfaces at the time of proposal. The running boards shall be attached to a frame mounted outrigger support structure. Each running board to have a 3" downward bend on the front and side faces with a 1" underside return for superior strength.

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10-41-5515

SINGLE STAGE FIRE PUMP (CAFS)

The pump shall be a Darley LDMBC single stage fire pump, capable of a 1500 gpm rating.

Power to drive the pump shall be provided by the same engine used to propel the apparatus. The pump shall be midship mounted and designed to operate through an integral transmission, including a means for power selectivity to the driving axle or to the fire pump.

The pump casing shall be a fine grain cast iron alloy, vertically split, with a minimum 30,000 PSI tensile strength and bronze fitted.

The pump shall contain a cored heating jacket feature that, if selected, can be connected into the vehicle antifreeze system to protect the pump from freezing in cold climates.

The impeller shall be a high strength bronze alloy of mixed flow design, accurately balanced and splined to the pump shaft for precision fit and durability. The impeller shall feature a double suction inlet design with opposed volute cutwaters to minimize radial thrust.

The seal rings shall be renewable, double labyrinth, wrap around bronze type.

The pump shaft shall be precision ground stainless steel with long wearing titanium hard coating. The shaft shall be splined to receive broached impeller hubs, for greater resistance to wear, torsional vibration, and torque imposed by engine.

The bearings provided shall be heavy duty, deep groove, radial type ball bearings. They shall be oversized for extended life. The bearings shall be protected at all openings from road dirt and water splash with oil seals and water slingers.

The transmission case shall be heavy-duty cast iron alloy with adequate oil reserve capacity for low operating temperatures. The transmission case shall contain a magnetic drain plug for draining the gearcase oil and a dipstick for checking and filling the level of the gear case through its opening. The transmission shall also allow the use of an external heat exchanger for increased cooling under extreme conditions.

The pump driveshaft shall be precision ground, heat-treated alloy steel, with a minimum 2-1/2" x 10" splined ends. Gears shall be helical design, and shall be precision cut for quiet operation and extended life. The gears shall be cut from high strength alloy steel, heat-treated and gas nitrided. The gear face shall be 3-1/2" minimum.

The gearshift shall be a heat-treated alloy steel splined spur gear to engage either the pump drive gear or the truck drive shaft gear. The gear ratio of the pump shall be selected by the pump and apparatus manufacturer's Engineering Department.

Due to the advantages of the above gear and drive feature, chain drive and designs requiring additional lubrication are not acceptable.

A discharge manifold, as supplied as part of the pump by the pump manufacturer, shall include a discharge check valve assembly to allow priming of the pump from draft with discharges open and caps off.

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Due to the importance of the above discharge manifold and check valve assembly, intended to be included with the overall pump design, there shall be no exception allowed to this requirement.

Discharge outlets shall have extensions with companion flange openings to allow ease of service. Two ports shall be provided on a pump panel for testing of vacuum and pressure readings. A weather resistant Performance Data Plate shall be installed on a pump panel.

The pump priming system, heat exchanger system, discharge and suction valves, relief valves, pump shift, and master drain shall be as detailed elsewhere in these specifications.

Two (2) manuals covering the fire pump, pump transmission, and selected options of the fire pump shall be provided with the apparatus.

CAFS COMPATIBLE

The pump transmission shall be designed to accommodate an integrated, air compressor mounting bracket. This bracket shall be installed to properly align a rotary screw air compressor with an external sprocket driven by the pump transmission. The air compressor shall be driven using a Gates "Poly Chain GT" belt drive system. The air compressor drive sprocket shall be supplied with an electric over air, multi plate, industrial clutch designed to be engaged at idle and allow disengagement at any rpm. The clutch shall incorporate an automatic, high CAFS oil temperature shut down to avoid damage to the rotary screw air compressor. An interlock shall be installed to disallow air compressor engagement if engine rpm is higher than recommended.

10-90-1500

U.L. CERTIFICATION - 1500 GPM

The fire pump shall meet and perform the following tests to receive a U.L. Certification.

100% of rated capacity at 150 PSI net pump pressure

100% of rated capacity at 165 PSI net pump pressure

70% of rated capacity at 200 PSI net pump pressure

50% of rated capacity at 250 PSI net pump pressure

11-00-1200

PUMP SHIFT

One (1) air powered pump shift shall be installed in the cab. The shift shall engage the fire pump. The pump shift shall be engaged only when apparatus is in a stationary position and the parking brake is engaged. The following indicator lights shall be included with pump shift.

A green indicator light labeled "**PUMP ENGAGED**" shall indicate pump shift has successfully been completed.

A green indicator light labeled "**OK TO PUMP**", shall indicate the chassis transmission is in pump gear and parking brake is engaged.

10-44-3000

PUMP ANODES

The pump shall be supplied with two (2) anodes for corrosion protection. The anodes shall be mounted at a 3/4" tap location on the pump manifolds. One (1) anode shall be mounted on the suction side of the pump and one (1) anode on the discharge side of the pump.

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10-48-5700

TRANSMISSION LOCK-UP DEVICE

The automatic chassis transmission shall be delivered to the body builder with high gear lock up device installed on the automatic transmission, to allow proper gear ratio for pump operation. The transmission shall be programmed by the chassis manufacturer to include this feature.

10-49-0100

DRIVELINE MODIFICATION

The chassis driveline shall be modified to accommodate any changes required by the installation of the fire pump.

11-00-0000

PUMP OPERATION DVD(s)

One (1) DVD(s) explaining proper fire pump operating procedures and maintenance for the fire pump shall be included upon delivery. The DVD(s) shall be produced and provided by the same company that manufactures the fire apparatus.

11-00-5200

AIR COMPRESSOR SHIFT (CAFS)

An electric powered (CAFS) air compressor shift shall be installed on the pump operator's panel to engage the CAFS air compressor. The switch shall include a green; "air compressor engaged" indicator light located on the operators pump panel.

11-01-2000

ELECTRIC PRIMER (FLUIDLESS)

One (1) 12V positive displacement type rotary vane primer of a fluidless design shall be provided for the fire pump priming system. A single, push-pull control shall be located on the pump operator's panel with a "Pull to Prime - Push To Close" label. The primer shall not require a lubrication tank. The priming pump shall be constructed of heat treated aluminum and hard coat anodized.

11-01-2800

The pump priming system shall include a light to indicate when the pump priming system has been activated. The light shall be red in color and shall be labeled "WARNING - Primer Engaged".

17-64-5200

PRESSURE GOVERNOR

A Darley "**AUTO CONTROL**" electronic pressure governor and engine monitoring system shall be installed on the pump operators control panel. The governor shall be configured to operate with the chassis engine. It shall regulate engine RPM to maintain a consistent pressure out of the water pump over a wide range of outgoing flows. The unit shall operate in both RPM and PSI modes. The 6-1/2" x 7-1/2" control unit shall include the following features:

DISPLAY:

- A 4-digit LED readout for pump discharge pressure.
- A 4-digit LED readout for pump intake pressure.
- A 20 segment LED bar graph for the pressure or RPM setting.
- A 4-digit readout for engine RPMs.

--Three (3), 10 segment bar graphs for battery voltage, engine oil pressure, and engine temperature. The bar graph display shall flash if low voltage, low oil pressure, or high engine temperature condition occurs.

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--"Throttle Ready" green LED. It shall indicate that the pump is engaged in the proper stationary pumping position, and that the parking brake is set.

FUNCTION SWITCHES:

Idle Mode - Preset - Increase - Decrease - Silence.

This system shall utilize information from the chassis engine ECU.

An audible alarm buzzer shall be included.

11-00-4400

INDICATOR LIGHT

A green indicator light labeled "**THROTTLE READY**" shall be included with the pressure governor control located on the pump operator's panel. It shall indicate that the pump is engaged in the proper stationary pumping position, and that the parking brake is set.

11-02-4000

INTAKE RELIEF VALVE

One (1) bronze, Elkhart intake relief valve shall be provided and mounted on the suction side of the pump, adjustable from 50-250 psi, on the valve itself. The valve shall be factory preset at approximately 125 psi. The system does not include an on/off control.

11-04-1000

HEAT EXCHANGER & HEATED PUMP CORE

An automatic heat exchanger system shall be provided in the pump. Antifreeze from the vehicle engine shall flow through the pump core jacket. Water flow from the fire pump shall be used to cool the engine antifreeze. This feature shall assist against the pump freezing in cold climates.

11-11-1000

MASTER DRAIN

One (1) rotary style master drain shall be installed on the lower portion of the side control panel. It shall be of brass construction and use a rotary screw mechanism against a rubber sealing surface. Each port shall be isolated. An "open and closed" label with arrows indicating direction shall be installed.

11-11-5000

1/4 TURN DRAINS

Each gated 1-1/2" or larger inlet and discharge shall have a quarter turn drain valve installed. The drain valves shall be located along the bottom on each pump panel. Inlets & discharges shall be plumbed to each drain at the lowest point. Each drain shall be plumbed with low pressure hose to drain below the module and be directed away from the pump operator. Each drain valve shall have a T-handle control with a recess in the "T" for a color coded function label.

12-01-6000

SUCTION INLETS

12-03-8000

6" LEFT SIDE INLET

One (1) 6" suction steamer inlet with male NH threads shall be provided, on the left side pump panel. The inlet shall have a removable screen.

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12-04-2000

INLET CAP

The inlet shall have a polished chrome cap, engraved with the pump manufacturer's logo and name. The logo and name shall be painted with a high quality urethane paint.

12-03-8600

6" RIGHT SIDE INLET

One (1) 6" suction steamer inlet with male NH threads shall be provided, on the right side pump panel. The inlet shall have a removable screen.

12-04-2000

INLET CAP

The inlet shall have a polished chrome cap, engraved with the pump manufacturer's logo and name. The logo and name shall be painted with a high quality urethane paint.

12-04-2200

DIRECT TANK AUTO FILL SYSTEM

One (1) automatic direct tank fill system shall be supplied and installed at the right side pump module with the 6" main intake.

The system shall operate refilling operations independently, without monitoring by the engineer. Refill operation shall not require apparatus or fire pump to be running. The system shall be capable of handling pressurized sources up to 300 psi. The system shall get an electronic signal from a Fire Research Vision Series water level gauge. The water level gauge supplies a programmed signal to stop filling when the tank level is at 85% full, and resume filling when the tank level reaches 50%. The valve system shall be able to be manually overridden in case of electric failure.

The controller shall have three toggle positions, with command signals to the fill valve:

- 1) Auto - Fully automates the water fill process, opens and closes the valve from signals sent by the water level gauge
- 2) Off - Closes the valve
- 3) Open - Opens the valve

The system shall enable the operator to perform the following control/operation functions and status indicators for the refill operation:

- 1) Provide toggle positions for Auto/Off/Open for control of electric refill valve
- 2) Solid green light advises the valve is open
- 3) Solid red light advises the valve is closed

An installation and operation manual shall be provided, along with a one year limited warranty by the manufacturer.

17-35-1000

PUMP PANEL ID PLATE

An identification plate, prepared by the fire pump manufacturer, shall be installed on the pump operator control panel to identify the fire pump serial number, model number, and performance.

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17-35-1200

WARNING - PUMP OPERATOR

A warning plate shall be installed on the pump operator's panel that states the following:

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

11-10-2000

PLUMBING SYSTEM (STAINLESS/BRASS)

All auxiliary suction and discharge plumbing related fittings, waterways, and manifolds shall be fabricated with stainless steel pipe, brass or high pressure hose with stainless steel couplings. Galvanized components and/or iron pipe components are not acceptable.

Upon completion, the entire system shall be fully pressure tested.

The plumbing and valve arrangement shall be capable of delivering water to the pump at a minimum flow rate of 500 GPM while pumping at 150 psi pressure.

Each gated intake shall be equipped with a 3/4 inch bleeder valve located in close proximity to the intake. All intakes shall be provided with suitable closures (valves or caps) capable of withstanding 500 PSI.

When any 3" or larger intake or discharge is gated (except tank to pump valve), the valve shall have a mechanism to allow the valve to fully open or fully close no faster than 3 seconds.

Any 2-1/2" or larger discharge outlet, mounted 42" or higher from ground, which hose is to be connected, and which is not in a hose storage area, shall be supplied with a sweep elbow of at least 30 degrees.

All 1-1/2" and larger intakes and discharges shall be equipped with drains. All drain valves shall be operational without the operator having to get under the apparatus. All drains shall be detailed elsewhere in these specifications.

All discharges and intakes shall terminate with chrome NST adapters, with chrome caps and chains, unless detailed otherwise in these specifications.

12-07-1000

2-1/2" SUCTION(S) - LEFT SIDE (Darley)

One (1) 2-1/2" brass suction valve(s) shall be installed on the left pump panel with the valve body mounted behind the pump panel. The control handle(s) shall be the quarter turn ball type, of the fixed pivot design, and located alongside the suction valve.

The suction(s) shall terminate with a 2-1/2" female NST chrome inlet swivel, a chrome male plug, chain, and a brass inlet strainer.

The valve(s) shall be Darley brand with a polished stainless steel ball.

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12-18-0500

TANK TO PUMP LINE (MANUAL)

One (1) 3" tank to pump line shall be provided for connection between the water tank and the fire pump. The valve shall be a 3" bronze, quarter turn ball type. The valve shall be manually controlled from the pump operator's panel.

12-19-2000

TANK TO PUMP CHECK VALVE

The Darley fire pump suction inlet manifold shall be provided with an integral tank to pump check valve. The check valve shall be designed to automatically open when drafting from an onboard water tank, and close if the pump suction receives water pressure from an outside source.

13-01-2000

2" TANK FILL

One (1) 2" pump to tank fill shall be provided with a 2" inline bronze valve. The valve shall be manually controlled and properly labeled at the pump operator's panel.

14-02-4150

220 CFM COMPRESSED AIR FOAM SYSTEM

The apparatus shall be equipped with the latest, high energy, automatic, compressed air foam system (AutoCAFS II).

Ratings: The fire pump and air compressor shall be sized to provide at least 220 CFM (cubic feet per minute) of compressed air while simultaneously flowing at least 440 GPM (gallons per minute) of water flow. The pressure of the system shall be set at 125 PSI for the duration of this test.

This rating is as outlined with the NFPA recommendation that the water pump shall discharge two gallons of water for every one CFM of compressed air discharge. Fire pumps with UL ratings in excess of 1000 GPM commonly flow near capacity while simultaneously operating the air compressor at full output.

Components: The air compressor shall be a high quality, industrial rated, modulating, continuous duty, and of rotary screw design. The air compressor shall be mechanically driven by the main pump and shall be so designed as to provide optimum performance at 70% of rated engine RPM. Air compressor drive train shall provide a means to engage and disengage the air compressor as required.

The air compressor system shall include a pressurized oil lubrication system, oil reservoir with receiver/separator elements, oil filter, inlet air filter, and modulating air inlet control. The air compressor shall be provided with a pressure control system to automatically balance air pressure to water pressure. The air compressor air inlet valve shall open and close to provide the air flow desired while maintaining the air system pressure to water pump pressure to within 5 PSI differential. This balancing system is essential for safe operation of a compressed air foam system.

The air compressor lubrication system shall require cooling water to be supplied from the fire pump through a heat exchanger to cool the air compressor oil. The essential water flow to this oil cooler shall be supplied using a self-cleaning, flushed strainer system to ensure a consistent flow of cooling water. The oil temperature shall be thermostatically controlled to remain at a consistent operating temperature within the range from 170° F to 190° F.

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AUTO CAFS COMMANDER

Panel Mounted Controls: The air compressor system shall have mounted on the operators control panel an "AutoCAFS Commander" electronic control used to engage and disengage the AutoCAFS air compressor. It includes an On/Off button with engagement light as well as the following features.

Additional Features

- Digital Air Pressure Gauge
- Mode button to switch between RPM readout, Hourmeter, and optional Air flow meter.
- Digital Air Compressor Oil Temperature Reading
- Programmable Engagement Speed Protection
- Automatic Blow Down Pressure Protection
- Programmable OverSpeed Warning with light and flashing message in Info Center
- Programmable High Speed Automatic Disengagement System
- Programmable Over Heat Warning
- Programmable High Temperature Automatic Disengagement System

-"AutoOn" setting. Allows automatic engagement of the AutoCAFS air compressor any time the pump is placed into gear and operated. This feature can be used to eliminate two (2) steps when operating a CAFS when used in conjunction with the FoamPro "AutoOn" feature in the foam proportioner.

CAFS AIR INJECTION - AUTOMATIC

The AutoCAFS II shall utilize automatic air flow switch controls to inject the proper volume of compressed air into the foam discharges. A panel mounted toggle switch control shall automatically regulate the precise amount of compressed air independently into each compressed air foam system discharge of 2" plumbing or less. The air flow amount shall be factory preset to the proper levels. Each foam discharge shall include a manually adjustable valve mounted inside the pump compartment for fine tuning when desired.

The automatic control shall consist of a weatherproof toggle switch which electrically activates an air flow valve sized according to the SCFM requirement of the discharge. Each automatic air flow injection switch, mounted on the panel, shall be installed using a red protective switch cover. Each CAFS air injection switch shall be appropriately labeled.

AIR OUTLETS 1/4" CAFS SUPPLY

There shall be brass 1/4" female air hose quick-disconnect fittings mounted on each side pump panel. A bulkhead fitting with a removable coupling shall be mounted to the panel to allow for panel serviceability. The fittings shall be connected to the apparatus CAFS air compressor discharge outlet using 3/8" red flexible hose. There shall be an adjustable regulator installed on the discharge side of the air compressor separator to provide clean oil free compressed air to the side panels. Two (2) male quick disconnect fittings shall also be supplied.

STANDARD FOAM SUPPLY VALVE

The foam system shall be installed with a 3-way foam system supply valve. This 3/4" valve functions as a multipurpose valve control. In the standard position, the valve provides foam supplied from the foam tank to the foam proportioner.

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In the next position, the valve provides a drain using a short rubber hose connected to this valve. In the final position, the valve provides an "Off" position to allow for cleaning of the inline foam concentrate strainer. In this final position, the drain hose can also be utilized as an overboard secondary foam pickup hose.

This alternate source to the foam proportioner shall be provided near the inlet to the foam pump using a 3/4" three way valve to disconnect foam flow from the tank and allow foam to be drawn from a pail or other source through a 3/4" inside diameter yellow hose approximately four feet long. This hose shall be provided near the pump panel on the side of the truck and is intended to work best with the pail of foam concentrate setting on the running board.

This compressed air foam system shall include an air pressure gauge for use with CAFS.

Each of the components of this Automatic Compressed Air Foam System - (air compressor, drive system, foam proportioner, control and instrumentation system) shall be sized, driven, and installed to produce a well operating and reliable CAFS unit.

This (AutoCAFS II) compressed air foam system shall be completely assembled and tested by the fire pump manufacturing facility before delivery. The system shall then be installed by the fire apparatus manufacturer and retested for complete NFPA compliancy.

FOAM OUTLETS

The compressed air foam system shall be plumbed to provide both foam solution and compressed air to the specified discharges. Detailed descriptions of these discharges shall be provided elsewhere in these specifications.

14-14-2500

CAFS IN SERVICE REQUIREMENTS

The Darley Company is the leader in compressed air foam technology. Darley has CAFS systems throughout the United States and around the globe, operating successfully and effectively.

A listing of CAFS customers' names with addresses, phone numbers, contact persons, and in service dates is available upon request.

14-14-2800

CAFS TESTING - DEMONSTRATION - MANUALS

Every Darley compressed air foam system is tested prior to delivery. After testing is completed, the foam system is flushed. Demonstration for proper operation and maintenance can be provided for the Purchaser's designated personnel at Darley, or at a mutually agreed upon location. Two (2) manuals for the CAFS pumping system are provided upon delivery.

14-20-2000

FOAM PROPORTIONER (2001 System)

A FoamPro 2001 Class A automatic, electronic, direct injection, foam proportioning system shall be installed on the discharge side of the pump. It shall provide foam to predetermined foam discharge(s). This foam system is completely automatic and requires only one push button to turn it on before the system is functioning.

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The system shall incorporate a paddle wheel flow meter to measure the water flow, and based on the foam percentage selected at the controller the direct injection pump shall inject the proper amount of foam into the foam discharge(s).

The system is capable of providing precise foam solution concentration rates from 0.1% to 3%, and is operator adjustable with the push button digital display control.

System Capacity - Foam Pump is capable of 2.5 gpm of foam output @ 150 psi. Pump motor is 1/2 HP 12 volt.

Foam Concentration.....Water Flow Range

0.1%.....	20-2600 gpm
0.2%.....	20-1300 gpm
0.3%.....	20-833 gpm
0.5%.....	20-520 gpm
1.0%.....	20-260 gpm
3.0%.....	20-85 gpm

A check valve shall be installed between the flowmeter and the injection fitting to avoid foam contamination back into the rest of the pump.

System Features: Four (4) selectable modes for operator information:

- 1) Flow mode: Displays the total amount of water being flowed out of the foam discharge(s). Foam system need not be enabled to function in this mode.
- 2) Total Water mode: When selected shows the total amount of water flowed out of the foam discharge(s) since the unit was in operation.
- 3) Foam Percentage % mode: When selected shows the percentage rate that foam is being injected at if the system was turned on. This percentage can be changed by pressing the up or down arrow buttons at the bottom of the display.
- 4) Total Foam mode: When selected shows the total amount of foam that has been injected since the unit was turned on.

System shall be provided with a low foam tank level switch which shall alert operator of low foam concentrate level and shall automatically shut unit off after two minutes.

Foam system flushing is achieved by simply turning off the unit and flowing water out of the discharge(s) that were previously flowing foam solution.

System shall be completely installed inside pump compartment, with digital control unit and instruction plate mounted on the pump operators control panel. An installation and operation manual shall be included with the system. The system shall be installed by a certified FoamPro dealer only, and shall be fully calibrated and tested for proper operation prior to delivery.

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WS Darley

15-20-0400

2-1/2" LEFT SIDE DISCHARGES (Darley)

Two (2) 2-1/2" discharge outlets with 2-1/2" pipe and valve with NST threads shall be supplied at the left side panel. Each valve shall be a quarter turn ball type, self-locking, fixed pivot design and shall be operated with a lever control from the pump operator's panel.

Each valve shall be Darley bronze valve with a high polished stainless steel ball.

15-50-6150

Each valve shall have a chrome 30 degree elbow, with a chrome cap and a stainless steel retaining chain.

17-42-3300

PRESSURE GAUGES

Two (2) 2-1/2" liquid filled gauges, each with a stainless steel bezel shall be provided, one for each discharge. The gauges shall be located on the pump operator's panel near the respective discharge control.

15-30-0300

2-1/2" RIGHT SIDE DISCHARGE (Darley)

One (1) 2-1/2" discharge outlet with 2-1/2" pipe and valve and NST threads shall be supplied at the right side panel. The valve shall be a quarter turn ball type, self-locking, fixed pivot design and shall be operated with a lever control from the operator's panel.

The valve shall be Darley bronze valve with a high polished stainless steel ball.

15-50-6100

The valve shall have a chrome 30 degree elbow, with a chrome cap and a stainless steel retaining chain.

17-42-3200

PRESSURE GAUGE

A 2-1/2" liquid filled gauge with a stainless steel bezel shall be provided for the discharge. The gauge shall be located on the pump operator's panel near the discharge control.

15-30-3000

3" RIGHT SIDE DISCHARGE

One (1) 3" discharge outlet with 3" pipe and valve and NST threads shall be supplied at the right side panel. The valve shall be a bronze valve. The valve shall be a quarter turn ball type, self-locking, fixed pivot design and shall be operated with a manual control from the operator's panel.

15-50-6770

STORZ ADAPTER

The discharge shall have a 3" NSTF x 5" Storz 30 degree elbow with cap and retaining cable.

17-42-3200

PRESSURE GAUGE

A 2-1/2" liquid filled gauge with a stainless steel bezel shall be provided for the discharge. The gauge shall be located on the pump operator's panel near the discharge control.

VS003 The FireTruck

WS Darley

15-54-1100

DECK GUN DISCHARGE

One (1) 3" deck pipe assembly with a 3" bronze slo-cloz valve shall be provided above the pump as a discharge for a deck gun. The piping shall terminate with NPT threads.

A manually operated control handle shall be located on the pump operator's control panel.

15-58-1100

DECK PIPE FLANGE

One (1) deck gun pipe outlet flange shall be installed on the deck gun piping. It shall be a four bolt flange installed for mounting a deck gun.

17-42-3200

PRESSURE GAUGE

A 2-1/2" liquid filled gauge with a stainless steel bezel shall be provided for the discharge. The gauge shall be located on the pump operator's panel near the discharge control.

15-54-4100

2-1/2" CAFS DECK GUN DISCHARGE

One (1) electrically controlled 2-1/2" CAFS line with mixer plumbing with mixer and 2-1/2" bronze ball valve shall be installed to supply CAFS to the deck gun discharge outlet detailed elsewhere in these specifications. The CAFS line and electric valve shall be connected to the deck gun piping above the 3" deck gun valve. The CAFS discharge control shall be located on the operators control panel.

15-68-1000

SINGLE CROSSLAY

One (1) 1-3/4" crosslay shall be installed above the pump. The crosslay shall have capacity for 200 ft. of 1-3/4" double jacket fire hose. The crosslay shall have 2" plumbing and 2" self-locking valve and terminate with a 2" NPT x 1-1/2" NST chicksan type swivel at the center of the crosslay flooring. The swivel shall allow hose out either side of the crosslay. The outside edges of each side opening shall be trimmed with polished stainless steel. A manual control shall be furnished at the pump operator's panel.

15-69-3645

HOSE STRAP(S)

One (1) Fire Research JackStrap(s) shall be provided; designed to attach hose ends to the apparatus, to help prevent fire hose from inadvertently coming off the apparatus while responding to or returning from an incident. The JackStrap(s) shall be made of heavy duty 2-inch wide polypropylene webbing. An adjustable hose loop shall fit on supply and working hose from 1-1/2 to 5 inches. A separate shoulder loop shall help the firefighter when pulling a supply line or help support a working hand line. When used on a hydrant line, the shoulder loop shall be capable of firmly holding hose to the hydrant during a hose stretch. There shall be a side pocket on the shoulder loop to hold a hydrant tool.

17-42-3200

PRESSURE GAUGE

A 2-1/2" liquid filled gauge with a stainless steel bezel shall be provided for the discharge. The gauge shall be located on the pump operator's panel near the discharge control.

VS003 The FireTruck

WS Darley

15-72-4000

SPEEDLAY HOSEBEDS (CAFS)

Two (2) speedlays shall be installed as part of the pump compartment, located on the front of the compartment. The speedlays shall each have capacity for 200 ft. of 1-3/4" double jacket fire hose. The speedlays shall each be piped with 2" pipe and 2" self-locking valve and terminate with a 2" NPT x 1-1/2" NST chicksan type swivel at center of the speedlay. The swivels shall allow hose out either side of each speedlay. The outside edges of each side opening shall be trimmed with polished stainless steel. A manual control shall be furnished at the pump operator's panel for each. Each speedlay shall be piped, including required check valves and air flow injection control, to provide water, foam, or compressed air foam.

15-73-4052

HOSE STRAPS

Two (2) Fire Research JackStraps shall be provided; designed to attach hose ends to the apparatus, to help prevent fire hose from inadvertently coming off the apparatus while responding to or returning from an incident. The JackStraps shall be made of heavy duty 2-inch wide polypropylene webbing. An adjustable hose loop shall fit on supply and working hose from 1-1/2 to 5 inches. A separate shoulder loop shall help the firefighter when pulling a supply line or help support a working hand line. When used on a hydrant line, the shoulder loop shall be capable of firmly holding hose to the hydrant during a hose stretch. There shall be a side pocket on the shoulder loop to hold a hydrant tool.

17-42-3300

PRESSURE GAUGES

Two (2) 2-1/2" liquid filled gauges, each with a stainless steel bezel shall be provided, one for each discharge. The gauges shall be located on the pump operator's panel near the respective discharge control.

15-69-3000

ALUMINUM CROSSLAY COVER

There shall be an aluminum cover for the crosslay(s). The cover shall be constructed of a minimum of 1/8" aluminum tread plate and be hinged with a stainless steel knuckle hinge. The cover shall be hinged to open toward the chassis cab. The cover shall have a hold down system that shall hold the cover down. A rubber type bumper shall be used to protect the cab paint from the cover.

17-41-7010

WATER LEVEL GAUGE

One (1) Fire Research "**TankVision**" water tank level gauge shall be installed on the pump operator's panel. The gauge shall have an LED display, which flashes when the tank level reaches 25% of capacity. A built in calibration system shall allow a bottom tank mounted transducer to be mounted with any tank configuration.

VS003 The FireTruck

WS Darley

19-00-3100

WATER TANK, FIRE BODY & RELATED COMPONENTS

BODY CONSTRUCTION

The body and water tank shall be fabricated using special high strength copolymer materials; providing a durable, impact resistant, corrosion resistant, and lightweight design.

The width of the apparatus body from the outside face of the left compartments to the outside face of the right compartments shall be 96.00" wide.

19-01-0425

INTEGRAL BODY/TANK CONSTRUCTION

The water tank shall be integral with the body. The body and water tank shall be fabricated using the same special high strength copolymer materials; providing a durable, impact resistant, corrosion resistant, and lightweight design. Due to the added strength and durability provided with this integral design, there shall be NO EXCEPTION to this requirement.

31-03-0100

COPOLYMER BODY CONSTRUCTION

The body shall be fabricated using special high strength, copolymer sheet materials, providing a durable, impact resistant, corrosion resistant, and lightweight body. The body shall be fabricated using Aristech TI-4007-L copolymer (or equal) extruded sheets. All seams shall be fully welded. All outside corners on the body shall have a minimum 1/2" radius. The entire body shall be a welded one piece assembly; assembled and painted prior to mounting on the subframe and the chassis.

Due to the importance of the strength and impact resistance of the copolymer material, there shall be no exception to these requirements.

Only builders who can show examples of previous copolymer constructed bodies shall be accepted.

31-19-1000

REAR TOW EYES

Two (2) heavy duty steel tow eyes, approximately 3/4" thick, shall be provided beneath the rear tailboard. The tow eyes shall be painted black unless specified otherwise.

31-24-3050

COMPARTMENT CONSTRUCTION

The compartments, including the floors, shall be constructed of the same heavy duty smooth copolymer material as used for the body. All seams shall be completely welded. Divider walls between compartments shall be single wall construction with a minimum wall thickness of 3/8". Compartment floors shall be a minimum of 1-1/8" thick and shall have a minimum of a 3/4" lip above bottom of the door opening, providing a sweep out design. All compartment door opening lips shall be protected with polished stainless steel trim. For adequate ventilation and air displacement, each compartment shall be properly louvered with square black heavy plastic vents. The forward wall of the front compartments, and rearmost wall of the rear compartments, shall have removable panels, constructed from the same body material, to cover and protect all 12 volt electrical accessories mounted on the walls. The panels shall be removable to provide access to those components. Compartment interiors shall be provided in a natural unpainted finish.

VS003 The FireTruck

WS Darley

31-30-1000

FENDER PANELS

Side fender panels above the rear wheels shall be heavy duty smooth copolymer material. Each shall be painted the same color as the exterior body.

FENDER LINERS

Copolymer fender liners shall be welded into the wheel well area, above the rear wheels. Adequate clearance shall be provided for the installation of single tire chains. The inner liners shall be textured black copolymer material.

31-40-0073

HOSE BED

There shall be a hose bed furnished on this apparatus.

31-40-1000

HOSE BED CONSTRUCTION

The hose bed walls shall be of the same copolymer material as the body, reinforced at the corners. The upper, outer edges shall have a solid tube type design for strength and stiffness. The hose bed shall be free from all projections, which may interfere with the unloading of hose.

The interior surface of the walls in the hose bed area shall be overlaid with textured black copolymer material for ultimate protection.

31-41-1200

HOSE BED CAPACITY

The hose bed shall have the recommended minimum cubic foot of usable capacity for a hose load.

31-42-1100

HOSE BED FLOORING

A hose bed floor shall be provided and constructed of textured black copolymer material. The slats shall be properly spaced to allow passage of air between the hose and the booster tank.

31-43-1500

HOSE BED DIVIDER(S)

One (1) adjustable copolymer hose bed divider(s) shall be provided and installed in extruded tracks to allow adjustment from side to side for alternate hose capacities. The divider(s) shall have a textured black finish, and shall have a radius corner on the rear portion.

31-46-6015

HOSE STRAP(S)

Two (2) Fire Research JackStrap(s) shall be provided; designed to attach hose ends to the apparatus, to help prevent fire hose from inadvertently coming off the apparatus while responding to or returning from an incident.

The JackStrap shall be made of heavy duty 2-inch wide polypropylene webbing. An adjustable hose loop shall fit on supply and working hose from 1-1/2 to 5 inches. A separate shoulder loop shall help the firefighter when pulling a supply line or help support a working hand line. When used on a hydrant line, the shoulder loop shall be capable of firmly holding hose to the hydrant during a hose stretch. There shall be a side pocket on the shoulder loop to hold a hydrant tool.

VS003 The FireTruck

WS Darley

31-46-0500

HOSE BED COVER (Dealer/Buyer-End User)

The apparatus Dealer and/or the apparatus Buyer-End User shall be responsible for providing a hinged metal, fastened tarp, or other means; to hold items in any hose bed, as recommended by NFPA, prior to the apparatus being put into service.

There are no requirements in these specifications, for the apparatus manufacturer to provide these items.

31-50-0100

FASTENERS

All fasteners used to mount or secure components to the body shall be of stainless steel construction. Items fastened directly into the copolymer shall use sheet metal screws, stainless steel T-nuts or threaded brass inserts, depending on application. Upon request by the department, the manufacturer shall be required to provide a sample of the fasteners to be used in the body construction.

31-51-0200

TREADPLATE AND TRIM

All treadplate shall be bright aluminum. Any horizontal surfaces with aluminum treadplate shall be overlaid with embossed 1/8" bright aluminum treadplate. The aluminum treadplate shall meet recommended requirements for non-slip surfaces.

The front face of the body sides shall be overlaid with bright aluminum treadplate. The rear of the apparatus inside of the side compartments, and the rear panels below the hose bed shall be covered with bright aluminum treadplate.

31-70-0500

RUBRAILS

Rubrails shall be installed using solid black rubber material designed to help protect the lower body and cushion against accidental contact. Each rubrail shall be mounted below the lower side compartments and at the vehicle rear body, next to the rear tailboard. Each end shall have a hard black rubber end cap.

There shall be bright polished scuff strips mounted between the body surface and the rub rails.

31-80-0300

FRONT FOLDING STEPS LEFT

Three (3) large, heavy duty folding steps shall be furnished and located at the front body face of the left side compartments. There shall be a barrier material installed between the body surface and the steps.

31-80-2300

FRONT FOLDING STEPS RIGHT

Three (3) large, heavy duty folding steps shall be furnished and located at the front body face of the right side compartments. There shall be a barrier material installed between the body surface and the steps.

31-80-4100

REAR FOLDING STEPS

Six (6) large, heavy duty chrome folding steps shall be furnished and located, three each side, at the apparatus rear. There shall be a barrier material installed between the body surface and the steps.

VS003 The FireTruck

WS Darley

31-92-1400

ACCESS HANDRAILS

Four (4) access handrails, approximately 10" long, shall be provided. Each handrail shall be 1-1/4" extruded aluminum tubing, with rubber grip inserts, in chrome or stainless steel stanchions. Drain holes shall be provided to allow moisture drainage. There shall be a barrier material installed between the body surface and the handrails.

--Two (2) handrails shall be provided along top end of the hosebed at the rear, one on each side.

--Two (2) handrails shall be provided along the top of the hosebed at the front of the body.

31-92-0100

NO REAR VERTICAL HANDRAILS (See Telelights)

There shall be no separate vertical handrails provided at the rear. The telescoping telelights specified at the rear shall be ordered with the NFPA handrail hand grip surface built into the telescoping pole.

31-92-4200

HORIZONTAL REAR CROSSRAIL

One (1) horizontal rear crossrail shall be provided at the upper rear portion of the rear body panel. The rail shall be the approximate width of the rear body, between the width of any side compartments. It shall be 1-1/4" extruded aluminum tubing with rubber grip inserts, mounted in chrome stanchions. There shall be a barrier material installed between the body surface and the handrail.

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WS Darley

20-10-5200

1000 GALLON TANK - COPOLYMER

The booster tank shall be constructed of a copolymer material and properly baffled.

The tank shall be provided with at least one (1) full length longitudinal baffle and a sufficient number of transverse baffles so that the maximum dimension of any spaces in the tank, either transverse or longitudinal, shall not exceed 46", and not less than 23".

The baffles shall have openings at both the top and bottom to permit movement of air and water between spaces to allow maximum flow requirements. The baffles shall form an integral part of the tank, and design shall be to provide and maintain safe road stability regardless of water level.

Tank shall have an overflow designed to prevent damage to the tank under high flow conditions and enclosed in front tank filler. The overflow is to be designed and located to prevent water loss on fast stops or starts, and is also to be located not to affect traction on the rear tires.

Tank outlet connection shall be designed with a 12" anti-swirl baffle plate above tank outlet to prevent air from mixing with the water when pumping from the tank.

A fill tower shall be installed in the tank top. It shall be of adequate size, minimum 10" X 10", to accommodate overflow and vents, to have a hinged cover and screen installed.

The tank shall be mounted per the manufacturer's requirements.

20-30-9501

TANK OVERFLOW

The fill tower shall have a 4" overflow that shall discharge beneath the tank, behind the rear wheels.

21-10-3000

FOAM TANK

One (1) 30 gallon foam tank shall be provided, integral with the water tank and shall have a rectangular fill tower, approximately 10" x 10", with a hinged cover and a removable screen. A tank drain shall be provided inside the pump compartment.

31-12-0200

SUBFRAME

The body shall be attached to and supported by a heavy duty, spring loaded, steel subframe bolted to the truck frame. The subframe shall be spring mounted to the chassis frame to allow for independent flexing of the body in relation to the chassis frame. The subframe shall be constructed from structural steel angle and C-channels. The subframe shall be completely powder coated prior to installation of the subframe on the chassis. No welding shall be allowed to the truck frame. Rubber isolator strips shall be installed at all contact points between body and subframe.

Due to the importance of the subframe flexibility and corrosion resistance, there shall be no exception to these requirements.

31-31-1000

FENDERETTES

Bright anodized aluminum fenderettes shall be bolted to the wheel well openings.

VS003 The FireTruck

WS Darley

31-61-3000

REAR TAILBOARD

The rear tailboard shall be bolted to a heavy duty steel support assembly attached to the chassis frame. The rear tailboard shall be a minimum of 10" deep and constructed of embossed fire apparatus quality bright aluminum treadplate with a "DiamondBack" extruded aluminum punched deck plate inset (or equal). The insert and aluminum treadplate shall meet recommended requirements for non-slip surfaces.

The rear tailboard shall be full width between the extended side compartments.

The rear tailboard shall be bolted to the support assembly with a drain gap shall be provided at the rear and each side of the tailboard.

The step height from ground to first step shall not exceed 24".

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WS Darley

33-08-4300

COPOLYMER COMPARTMENTS - LEFT

COMPARTMENT #1

One (1) full height compartment ahead of the rear wheels, approximately 44" wide x 61" high. The lower 27" height shall be 25" deep. The upper 32" shall be 13" deep upper where slide in storage for suction hose protrudes. The remaining forward upper section of the compartment shall be full depth. The door opening shall be approximately 42" wide x 57" high.

COMPARTMENT #2

One (1) compartment above the rear wheels, approximately 63" wide x 32" high x 13" deep. The door opening shall be approximately 58" wide x 28" high.

COMPARTMENT #3

One (1) full height compartment behind the rear wheels, approximately 54" wide x 61" high. The lower 27" shall be 25" deep. The upper 32" shall be 13" deep. The door opening shall be approximately 52" wide x 57" high.

35-09-2000

The side compartment door openings shall be fitted with a roll-up style doors.

33-09-5000

COPOLYMER COMPARTMENTS - RIGHT

COMPARTMENT #4

One (1) full height compartment ahead of the rear wheels, approximately 44" wide x 61" high x 25" deep in the lower section x 13" deep in the upper section. The door opening shall be approximately 42" wide x 57" high.

COMPARTMENT #5

One (1) compartment above the rear wheels, approximately 63" wide x 32" high x 13" deep. The door opening shall be approximately 58" wide x 28" high.

COMPARTMENT #6

One (1) full height compartment behind the rear wheels, approximately 54" wide x 61" high x 25" deep in lower section x 13" deep in the upper section. The door opening shall be approximately 52" wide x 57" high.

35-09-2000

The side compartment door openings shall be fitted with a roll-up style doors.

33-10-4300

COPOLYMER COMPARTMENT - REAR

COMPARTMENT #7

One (1) compartment at the rear, approximately 44" wide x 61" high x 34" deep. The door opening shall be approximately 38" wide x 55" high. The lower portion of the rear compartment shall be closed into the side compartments.

VS003 The FireTruck

WS Darley

35-20-3000

REAR ROLL UP DOOR

The rear compartment door opening shall be fitted with a roll-up style door.

35-17-0202

REAR ROLL UP DOOR FINISH

The rear roll up door shall be in a natural aluminum brushed finish.

35-90-1150

ROLL UP DOOR CONSTRUCTION

Robinson brand roll-up style doors shall be provided at the specified door locations.

Each door shall be manufactured in the United States.

The door slats shall be double wall box frame extrusion. The exterior surface of slat shall be flat and interior surface to be concave to prevent loose equipment from jamming the door. Door slats shall be anodized to prevent oxidation. Door slats to have interlocking end shoes on every slat to be secured by a punch dimple process. The door slats shall have interlocking joints with a folding locking flange. A PVC/vinyl inner seal to prevent any metal to metal contact shall be provided between each slat.

Each track shall be one piece construction with attaching flange and finishing flange incorporated into the design. The flange design eliminates any requirement for additional trim or caulk. Each track shall have a replaceable seal to prevent water and dust from entering the compartment.

Each assembly shall include an aluminum drip rail with a replaceable wiper seal.

Each roll-up door shall have a 4" counterbalance spring in the roller assembly to assist in lifting and help prevent the accidental closing.

A full width lift bar shall secure each door.

35-17-0102

SIDE ROLL UP DOOR FINISH

The side roll up doors shall be in a natural aluminum brushed finish.

37-10-1100

LADDER STORAGE - RIGHT

A ladder storage compartment shall be provided at the right side of the apparatus between the water tank and the body compartments. It shall be located just below the hose bed level. Access shall be from the rear of the apparatus. Appropriate stops shall be provided at the front of the ladders.

A vertically hinged aluminum door with push button style latches shall be provided to enclose the ladders at the rear. A switch shall be provided to activate compartment door ajar circuit. A stainless steel scuff plate shall be provided at the bottom edge of door opening.

In order to provide a comfortable and safe level of access to the ladders, and allow maximum compartmentation, there shall be no exception allowed to this feature.

37-10-2300

The ladder storage shall have capacity for one (1) aluminum 24 ft. two-section extension ladder, and one (1) aluminum 14 foot roof ladder.

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37-10-2400

Storage shall be provided for one (1) 10 ft. folding attic ladder.

37-10-2600

There shall be two (2) pike pole storage tubes included.

37-20-2010

SUCTION HOSE STORAGE LEFT

A suction hose storage compartment shall be provided at the left side of the apparatus between the water tank and the body compartments. The compartment shall be constructed from the same material as the body. It shall be located just below the hose bed level. Access shall be from the rear of the apparatus.

In order to provide a comfortable and safe level of access to the hoses, and allow maximum compartmentation, there shall be no exception allowed to this feature.

Two (2) "slots" shall be provided in the storage area for the hose to slide on and be held in position when stored. Appropriate stops shall be provided.

A vertically hinged aluminum door with push button style latches shall be provided to enclose the suction hose at the rear. A switch shall be provided to activate the compartment door ajar circuit. A stainless steel scuff plate shall be provided at the bottom edge of door opening.

37-50-2400

WHEEL WELL SCBA COMPARTMENTS

Four (4) wheel well air bottle compartments shall be provided and located at the rear wheel wells, two each side. Each compartment shall be a tube shaped design, fabricated from the same material as the body, and shall be properly supported to prevent cracking or breaking.

The front opening shall be seam welded to the wheel well. Each compartment shall have a drain to dispel moisture. Compartments of metal material shall be lined with black rubber to protect the finish of the air bottles.

Each compartment door shall be unpainted cast aluminum with latch.

38-00-0200

SHELVING TRACKS

Unistrut type tracks shall be provided in seven (7) body compartment(s). The tracks shall be mounted vertically from floor to ceiling. A minimum of four (4) tracks shall be provided for each compartment specified. The following compartments shall have unistrut track installed:

---Each of the side and rear compartments.

38-01-9100

ADJUSTABLE SHELVING

Five (5) heavy duty adjustable aluminum shelving, with edges turned up approximately 2" for added strength, shall be provided. Shelving shall be located as follows:

- 1.) One (1) in the front driver (left) side compartment #1 - lower.
- 2.) One (1) in the rear driver (left) side compartment #3 - lower.
- 3.) One (1) in the front officer (right) side compartment #4 - lower.
- 4.) One (1) in the rear driver (left) side compartment #6 - lower.
- 5.) One (1) in the rear compartment #7.

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38-25-2200

ROLL-OUT TRAY(S)

One (1) smooth aluminum rollout tray(s) shall be provided. Each tray specified shall be constructed of 3/16" smooth aluminum with a minimum 2" lip on all four sides. All corners shall be welded and ground smooth, all edges shall be deburred and trimmed with black vinyl edging, and bolted to roll-out mechanism. Isolating strips for dissimilar metals shall be used between tray(s) and the rollout mechanism.

The tray(s) shall be installed on heavy duty roller bearing slides, and shall have a lock at the in and out positions. The tray(s) shall have a load capacity of 500 lbs. evenly distributed, with a 1000 lbs tip load. The tray(s) shall extend out 100% from the closed position.

The tray(s) shall be located as follows:

---On the floor of rear compartment #7.

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WS Darley

40-00-0000

PAINT, STRIPING, AND LETTERING SECTION

40-10-2300

PAINT FINISH

The apparatus shall be finish painted with DuPont Chroma system paint. The compartment doors, if painted, shall be painted separately to ensure proper paint coverage on the body edges.

The apparatus shall be prepared and painted using the following procedures.

All surfaces to be painted shall be prepared and cleaned using soap and water. Prep Sol 3919S or Kwik Clean 3949S shall be used to remove any tar, wax, polish and grease.

All surfaces to be painted shall be scuffed using 80-150 grit sandpaper. All surfaces shall receive a final wipe using Lacquer and Enamel Cleaner 3939S, followed up with Plastic Prep 2319S.

Two (2) medium wet coats of adhesion promoter for Plastics 2322S shall be applied to all surfaces to be painted.

All surfaces to be painted shall be primed with URO Primer Filler 1140S. The primer mixture shall contain four (4) parts primer, one (1) part Activator 1125S, one and a half (1.5) parts Converter 1130S, and one half (.5) parts Flex Additive 2350S.

Two (2) applications of primer shall be applied. The first application shall be four (4) coats and the second application shall be three (3) coats.

A final application of sealer shall be applied using URO Primer Filler 1140S. The sealer mixture shall contain four (4) parts primer, one (1) part Activator 1125S, two (2) parts Converter 1130S and one half (.5) Flex Additive 2350S.

The base coat shall be Dupont ChromaBase. The paint shall be applied according to DuPont base coat application instructions. The base coat shall be ChromaBase mixed with 5% Flex Additive 2350S.

The clearcoat shall be DuPont ChromaClear. The clearcoat shall be applied according to DuPont clear coat application instructions. The clear coat shall be ChromaClear Multi Use 7500S and mixed with 5% Flex Additive 2350S.

The compartment interiors shall be unpainted and in their natural white finish.

A pint of touch up paint shall be provided for each color used.

40-12-0950

PAINT COLOR

The apparatus body paint shall be "cross referenced" from the chassis paint, and shall be painted to match the main chassis color as close as possible.

40-13-4000

WHEEL RIMS

The chassis wheels shall be as furnished by the chassis OEM. No additional finishes shall be provided by apparatus manufacturer.

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WS Darley

40-20-0500

LETTERING

Up to sixty (60) 3" vinyl letters with outline shall be supplied and installed on the apparatus.

NOTE: The lettering layout shall be provided at order entry.

40-25-0200

REFLECTIVE STRIPE

To comply with current NFPA standards, reflective striping shall be applied to the side of the vehicle chassis and body on at least 50% of the overall length of the vehicle. At least 50% of the rear and 25% of the front of the vehicle width shall have reflective striping applied.

Striping shall be 3M CONTROLTAC reflective striping (or equal).

40-25-1100

The stripe shall be a **6"** wide reflective stripe

40-25-2000

The reflective stripe color shall be **WHITE**.

40-25-4000

The reflective stripe shall be applied in a straight line along each side of the apparatus. The height of the stripe from the ground to the center of the stripe shall be per NFPA recommendations.

40-27-8100

REAR CHEVRON STRIPING

There shall be alternating reflective striping provided at the apparatus rear, in a chevron stripe pattern. At least 50% of the apparatus rear shall have the retroreflective chevron striping.

The chevron pattern shall slant downward on both sides of the vehicle at an angle of 45 degrees, pointing in the direction of the bottom rear corners of the apparatus. The pattern shall resemble an inverted "V", with the point of the chevron pattern at the top center of the apparatus.

40-27-8212

CHEVRON STRIPE WIDTH (6")

The chevron stripes shall each be 6" wide.

40-27-8310

CHEVRON COLORS

The chevron pattern shall be alternating RED and YELLOW stripes.

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WS Darley

50-00-0000

12 VOLT ELECTRICAL SECTION

50-00-0700

12 VOLT ELECTRICAL SYSTEM (Multiplexing)

MULTIPLEXING

A multiplexed wiring system shall be installed, controlling all electrical functions installed by the apparatus manufacturer. The system shall be driven by "nodes" in key locations around the vehicle.

ELECTRICAL LOAD MANAGEMENT

Electrical Load management shall also be part of this multiplex system, allowing diminished and load shedding capabilities of particular functions.

GENERAL WIRING

Apparatus body wiring shall be high temperature compatible wire, insulated with chemically cross-linked polyethylene. The wiring shall be resistant to grease, oil, fluids, and abrasion.

All insulated wire and cable shall conform to SAE J1127, Low Voltage Battery Cable, or SAE J1128, Low Voltage Primary Cable, type SXL, GXL, or TXL. Recommended temperature range for SXL, GXL, or TXL Wire is -60°F (-51°C) to +257°F (+125°C).

It shall be stranded copper alloy conductors of a gauge rated to carry 125% of the maximum current for which the circuit is protected. Wiring not within the multiplexed system shall be individually color coded and function labeled every three (3) inches on the insulation.

All required testing shall be performed before the apparatus is delivered. All required test documents shall be supplied at the time of apparatus delivery.

All wiring for the apparatus shall be installed in accordance with quality electrical standards, protected in loom or conduit. Grommets shall be installed where wire passes through body panels, where applicable.

WIRING DIAGRAMS

Electrical wiring diagrams of the specific apparatus shall be furnished with the completed apparatus.

50-00-2700

12 VOLT SWITCHES

There shall be a rocker switch panel provided in the cab. This switch panel shall control warning lights and 12 volt accessories. The switches shall be rocker style switches. Each switch shall have a pilot light indicating the "on" position. There shall be a main master rocker switch to cut power to all warning light rocker switches. The master switch shall be red in color with a red pilot light. Each switch shall be labeled as to its function.

50-01-0200

RUNNING LIGHTS & REFLECTORS

There shall be LED running lights and reflectors mounted on the body. The lights shall be recess mounted in rubrails or the body. They shall be at any running boards, body sides, and rear tailboard. The lights and reflectors shall meet USA Federal Motor Vehicle Safety Standard #108.

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WS Darley

50-01-0800

LICENSE PLATE HOLDER & LIGHT

A license plate light and holder shall be provided on the rear of the apparatus body. The light shall be wired to illuminate with the parking/headlights.

50-01-1050

MIDSHIP TURN SIGNAL (LED)

Two (2) Whelen 500 Series amber LED midship turn signals, each with a chrome trim plate, shall be mounted, one each side, at the rear wheel wells.

50-02-2100

REAR DIRECTIONALS

Rear directional lighting shall be supplied as follows:

Two (2) Whelen 6" x 4" LED stop and tail lights, one each side - Red.

Two (2) Whelen 6" x 4" LED turn signals, one each side - Amber.

Two (2) Whelen 6" x 4" LED back up lights, one each side - Clear.

50-02-5200

HOUSINGS FOR DIRECTIONALS

The Whelen signal lights shall each be housed in a model CAST4 cast aluminum bezel designed to hold four (4) lights each. The fourth light location shall be utilized for lower rear warning lights.

50-03-0200

REAR STEP LIGHTS

Two (2) step lights with non-corrosive rubber shock mounting shall be furnished and shall be located, one each side at the apparatus rear to illuminate respective stepping surfaces.

The lights shall be activated with a switch located in the cab.

50-03-0800

FRONT BODY STEP LIGHTS

Two (2) step lights with non-corrosive rubber shock mounting shall be furnished and located, one each side, at the front face of the apparatus body to illuminate the respective stepping surfaces. The lights shall be activated with a switch located in the cab.

50-05-4100

COMPARTMENT LIGHTING (LED)

Each body compartment shall contain one (1) LED clear vertical strip light assembly, as provided by ROM. Wide and shallow compartments over a wheel well shall have two strip lights, one on each side of the door.

Each light strip provided shall be full height of the compartment. Strip lighting provides uniform light dispersion throughout the compartment even when shelves are installed. The compartment strip lighting shall be automatically activated whenever a compartment door is opened.

50-05-5100

Each roll up door shall have an integral "door open" indicator magnet in the lift bar. If the bar is not properly closed, it shall activate the "Door Open" light in the cab.

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WS Darley

50-05-5500

"DO NOT MOVE APPARATUS" LIGHT

A flashing red light, properly labeled with the words "Warning - Do Not Move Apparatus When Light is On", shall be located in the cab. The light shall be activated automatically when any cab or body compartment door is opened, as long as the chassis parking brake is not engaged.

In addition, accessories such as a ladder rack (or similar storage rack), any extendable light or tower, or a telescoping deck gun device shall also be connected to this ajar circuit, to activate the light when any of these items are not properly nested, and the parking brake is not engaged.

50-07-0600

CHASSIS CAB GROUND/STEP LIGHTING (Chassis Provided)

Cab ground lighting shall be supplied with the chassis. Each light shall be controlled by the respective cab door switch. These lights are to be supplied and installed by the custom chassis manufacturer (See chassis specifications).

50-07-1000

UNDER BODY GROUND LIGHTS (LED)

Four (4) LED USA NFPA compliant ground lights shall be provided. Each light shall have a clear polycarbonate lens, and be shock mounted. Each shall be mounted on brackets, angled outward, beneath the apparatus. The lights shall be wired to activate when the apparatus is in the "park" position.

The lights shall be mounted as follows:

--Two (2) at the pump module running boards, one each side.

--Two (2) at the rear tailboard, one each side.

50-09-1000

UNITY HOSE BED/DECK LIGHTS

Two (2) 6" chrome plated Unity hose bed/deck lights shall be installed at the rear of the apparatus. Each light shall be manually operated and switched at the light.

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WS Darley

51-00-1000

WARNING LIGHT SYSTEM

The following warning lights shall be installed in zones, and properly switched. The upper and lower level zones shall be provided as one certified package by one light manufacturer.

54-00-3000

WHELEN PUMPER WARNING LIGHT SYSTEM (LED)

54-12-1300

LIGHT BAR

Zone A - (Upper Front) - One (1) Whelen FN72QLED 72" Edge light bar system shall be supplied and installed with the chassis. See the chassis specifications.

54-30-4000

Zone A (Lower Front) - Two (2) Whelen 600 series LED warning lights shall be mounted, one each side, on the front face of the cab or cab grille.

54-32-1000

The light color shall be as follows:

Driver's Side - **Red**, Officer's Side - **Red**

54-40-0400

Zone B (Right Side-Lower) - Three (3) Whelen 600 series LED warning lights shall be mounted at the lower front side corner, midship area, and rear side corners of the apparatus.

NOTE: The cab corner intersector and the cab midship warning are chassis furnished.

Zone D (Left Side-Lower) - Three (3) Whelen 600 series LED warning lights shall be mounted at the lower front side corner, midship area, and rear side corners of the apparatus.

NOTE: The cab corner intersector and the cab midship warning are chassis furnished.

54-42-1000

The light colors shall be as follows:

Driver's Side - **Red**

Officer's Side - **Red**

54-60-0565

Zone C (Rear-Upper) - Two (2) Whelen LED beacons shall be mounted, one each side, at the upper rear corners of the apparatus.

54-62-1150

The light colors shall be as follows:

Driver's Side - **Red**

Officer's Side - **Red**

54-70-0400

Zone C (Rear-Lower) - Two (2) 600 series LED warning lights shall be mounted, one each side, at the lower rear of the apparatus.

54-72-1000

The light colors shall be as follows:

Driver's Side - **Red.**

Officer's Side - **Red.**

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54-98-0000

CERTIFICATE

This warning light system shall be certified by the light manufacturer to meet the requirements of the applicable chapter of the NFPA, current at the time of contract.

57-30-3000

TRAFFIC ADVISOR (LED)

One (1) Whelen Traffic Advisor model #TAM65 shall be provided and installed. The traffic advisor shall incorporate a rectangular extruded black aluminum chassis with six amber TIR6™ Super-LED® lights with waterproof connectors. The TIR6 lights shall be installed in a clear optic hard coated polycarbonate lens housing. The TIR6 lights shall incorporate six amber Super-LEDs, a clear horizontal optic hard coated polycarbonate lens housing, and utilize a TIR reflector for maximum output. The hard coated lens housing shall provide extended life/luster protection against UV and chemical stresses. The TIR6 lens/reflector assembly and conformal coated PC board shall provide additional protection against environmental elements.

The solid state traffic advisor shall be vibration resistant. The TAM65 shall include model TACTLD1 control head that includes remote flash control. The TACTLD1 shall have four programmable directional sequence flash patterns of left, right, split, and flash. The LED display on the control head shall replicate the TAM65 directional sequence. The traffic advisor control head shall have a rear panel dip switch for the ability to set eight additional Scan-Lock™ flash patterns. The TACTLD1 shall contain a 10 amp external fuse for reverse polarity protection. The TACTLD1 shall include a bail strap mounting kit. The TAM65 will contain a 16/C 20GA 15' interconnecting cable with quick disconnect feature. The TAM65 shall have stainless steel hardware to surface mount.

12 Volt
2.84" high x 36.01" wide x 2.24" deep
Lens Color: Amber

57-32-1000

RECESS MOUNTING

The rear directional light bar shall be recess mounted into the rear body panel of the apparatus, centered at the upper rear portion. The recess shall be a removable "box" enclosure.

58-00-0030

SIREN CONTROL (Chassis Provided)

The siren control head shall be supplied and installed by chassis manufacturer (See the chassis specifications).

58-10-0140

SIREN SPEAKER (Chassis Provided)

The speaker for the electronic siren shall be supplied and installed by the chassis manufacturer.

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59-10-0005

12 VOLT TELESCOPING LIGHTING

59-10-3550

TELESCOPIC LED SCENELIGHTS

Two (2) bottom raise telescoping scene lights shall be provided and installed. Each light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 2.75" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

Each lamphead shall have eight (8) ultra-bright white LEDs. It shall operate at 12/24 volts DC, draw 13/6.5 amps, and generate 15,000 lumens. The lamphead shall direct 50 percent of the light onto the action area while providing 50 percent to illuminate the working area. The lamphead angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamphead shall incorporate heat-dissipating fins and be no more than 5 3/16" deep by 3 5/16" high by 11 1/2" wide. The lamphead and mounting arm shall be powder coated white. The floodlight shall be for fire service use.

65-90-0500

LIGHT LOCATION

The light(s) shall be mounted on the apparatus rear.

65-92-2600

LIGHT SWITCHING

Two (2) remote 12 volt weather resistant switch(es) shall be provided and installed at the pump operator's panel and inside the cab for the specified light(s). Each switch shall be properly labeled to indicate the light it controls.

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70-00-0050

EQUIPMENT SECTION

EQUIPMENT

The following equipment (if listed below) shall be supplied with the apparatus. It shall be shipped loose unless detailed below or otherwise in these specifications.

70-00-1100

One (1) 10 ft. Duo Safety #585-A aluminum folding ladder, with slip resistant end shoes, shall be provided.

70-00-7600

One (1) 14 ft. Duo Safety #775-A aluminum roof ladder, with folding roof hooks and prong feet, shall be provided.

70-01-2200

One (1) 24 ft. Duo Safety #900A two section aluminum extension ladder, with prong feet, shall be provided.

71-06-6000

Two (2) section(s) of 10 ft. x 6" clear Kochek or equal suction hose, with pyrolite, NST 6" couplings shall be provided.

75-01-0500

One (1) pair of Zico folding wheel chocks shall be provided. The chocks shall comply with NFPA 1901, current edition at time of proposal or order, and shall meet the SAE-J348 standard. The chocks shall be approximately 12" tall x 11-1/4" wide x 21" long, and weigh approximately 20 lbs.

75-01-1000

One (1) pair of Zico horizontal mount folding wheel chock brackets shall be installed in front of and behind the driver side rear wheels.

99-99-1000

PURCHASER RESPONSIBILITY

It shall be the responsibility of the Purchaser to furnish any NFPA recommended items not detailed in these specifications.

1500 GPM TheFireTruck Vision Side Pumper
 EZ Spec VS003
 WS Darley

	DESCRIPTION	QTY
7151400	Cover Sheet	1
	General Info	1
	---ADMINISTRATION SECTION---	1
	Product Quality And Workmanship	1
	NFPA Compliance	1
	Payment Terms	1
	-- -Darley - Standard Pay Terms	1
	Delivery Requirements	1
	-- -Darley Delivery Days After Contract	1
	The completed apparatus shall be ready for delivery within approximately _____ calendar days, following the signing of a contract by the purchaser, and the counter-signing of the same contract by Darley.	
	-- -Darley - FOB Chippewa Falls, WI	1
	Pre-Construction Meetings	1
	-- -None Required	1
	Inspection Trips	1
	-- -None Required	1
	Drawing Requirements	1
	-- - Darley Apparatus Drawings For Approval	1
	Warranty Requirements	1
	-- Warranty Terms	1
	-- - 1YR Darley Apparatus Warranty	1
	-- -Darley - Six (6) Year Fire Pump Warranty	1
	-- Body And Tank Warranty	1
	-- - Darley Life "Poly" Tank Warranty	1
	-- -Darley - Lifetime (20 Year) CoPoly Body Warranty	1
	-- - Darley 5YR Paint Warranty - Copolymer	1
	Demonstration Requirements	1
	-- - Darley Demonstration at Darley	1
	Manual And Data Requirements	1
	-- Darley Manuals	1
	Chassis Supplied By	1
	-- - Darley Supplied Chassis	1
	-- Chassis Handling	1
	Manufacturer Rights	1
	-- Proposal - Darley Rights	1

Spartan Metro Star 4x2 (Rear Axle Drive Only)

MFD with 10" raised roof

GAWR Front 18000#

GAWR Rear 24000#

Data Recording System

Engine Diesel 380HP Cummins ISL9 - EPA 2013

Diesel Exhaust Fluid Tank LH 6 Gal Fill Thru Rr Step

Fuel Tank 50 Gallon

Front Tire 315/80R 22.5 Goodyear G291

Rear Tire 11R 22.5 Goodyear G661 HAS

Front and Rear wheels - Alcoa Aluminum

Brake System ABS/ATC/ESC

Wheelbase 192.0"

Seat Driver Seats Inc Battalion 2-Way Manual ABTS

Occupant Protection Driver-Officer-Crew Advanced
Protection System

Seat Officer Seats Inc Battalion 2-Way Manual ABTS SCBA

Zico ULL Bracket w/LLS Strap

Seat Rear Facing Outer (2) R/L - Seats Inc Battalion Fixed
SCBA Zico ULL Bracket w/LLS StrapSeat Crew Forward Facing Center (2) - Seats Inc Battalion
Flip-Up SCBA Zico ULL Bracket w/LLS Strap

Helmet Storage Ceiling (6)

Battery Conditioner Kussmaul 1200 Left Hand Rear Facing
Outboard Seat Position

Electrical Inlet 120 Volt 20 Amp Auto Eject Left Hand Cab

1

---CHASSIS MODIFICATION SECTION---

1

Chassis Modifications

1

Fuel Tank Door or Tank Coverings

1

|-- Fuel Fill Door - Left Body W/Rear Tank

1

Battery Switch Provided With Chassis

1

Battery Charger Provided On Chassis

1

Clear Cover for Transmission Shift

1

Mud Flaps (Front) (2)

1

Mud Flaps w/Logo (Rear) (2)

1

Exhaust Right Rear Wheels (Heat Shield)

1

Back Up Alarm (Chassis Furnished)

1

Identification Data Plate - Drivers Compartment

1

Occupant Plate - Drivers Compartment

1

Travel Height & GVWR Label

1

1

---PUMP, MODULE, AND RELATED ITEMS---

1

---Side Control Module (CAFS)---	1
-- NFPA 1901 Compliant Pump	1
-- Pump Operation - Side Panel	1
-- Pump Module - Side - Alum. Tubing	1
-- Side Operated Pump Panel	1
Side Panel - Vision Color Coded	1
Vision Colored Upper Gauge Panel	1
Opposite Side Pump Panel - Black Vinyl	1
Color Coded Labels (Integral) (Vision Panel)	1
-- Light Shield - Left Pump Panel (LED)	1
-- Light Shield - Right Pump Panel (LED)	1
-- Pump Compartment Lights (2)	1
-- Running Boards - Treadplate/Side Panel	1
LDMBC Side Control Package	1
-- Pump System - LDMBC 1500 Single Stage	1
-- U.L. Certification 1500 GPM	1
-- Pump Shift - Dash Mounted Air Switch	1
-- Anodes For Pump (2)	1
-- Pump System Lock-Up On Chassis Transmission	1
-- Driveline Modification - Pump Installation	1
-- Paint For Pump - Standard	1
-- Pump Operation DVD	1
-- LDMBC Air Compress Shift - Panel Mount	1
-- Primer - Fluidless - (1) Electric	1
-- Primer "ON" Light	1
-- Pump Discharge Relief - Pressure Governor	1
-- Pressure Governor - Darley AutoControl	1
-- Throttle Ready Indicator Light - Pressure Governor	1
-- Master Pressure Gauge - With Pressure Governor	1
-- Master Suction Gauge - With Pressure Governor	1
-- Engine Gauges & Alarms - With Pressure Governor	1
-- Relief Valve - Elkhart Intake	1
-- Heat Exchanger & Heated Pump Core System	1
-- Master Drain - Isolated Rotary Type	1
-- Individual 1/4 Turn Drains	1
-- Suction Inlet - Left Side - 6"	1
-- Suction Inlet Cap (With Logo)	1
-- Suction Inlet - Right Side - 6"	1
-- Suction Inlet Cap (With Logo)	1
-- Direct Water Tank Fill Automatic - Right Inlet	1
-- Pump ID Plate On Panel	1
-- Warning - Pump Operator	1
Plumbing System - Stainless/Brass	1
Suction - 2.5" Left - Darley (Side Control)	1
Tank To Pump 3" (Manual)	1
Integral Check Valve	1
Tank Fill - 2" (Manual)	1

AutoCAFS II - 220 CFM - Complete Kit (Auto On)	1
-- Proposal - CAFS In Service Requirements	1
-- CAFS Test/Demo/Manual Requirements	1
-- FoamPro 2001 (For Single Tank) (CAFS)	1
-- Discharges- Two (2) 2-1/2" Left Side - Darley	1
-- Discharge Elbows - Chrome (2) (1-1/2" - 3")	1
-- Gauge - 2-1/2" Dia. Press -30 to +600 (2)	1
-- Discharge - One (1) 2-1/2" Right Side - Darley	1
-- Discharge Elbow - Chrome (1) (1-1/2" - 3")	1
-- Gauge - 2-1/2" Dia. Press -30 to +600	1
-- Discharge - One (1) 3" Right Side (Manual)	1
-- Adapter - 3" NST x 5" Storz	1
-- Gauge - 2-1/2" Dia. Press -30 to +600	1
-- 3" Deck Gun Plumbing & 2-1/2" CAFS Bypass	1
-- Discharge - 3" Deck Gun Plumbing (Manual)	1
-- Mounting Flange - 4 Bolt	1
-- Gauge - 2-1/2" Dia. Press -30 to +600	1
-- CAFS T'd to Deck Gun Piping (Electric)	1
-- Crosslay - One (1) 1-3/4" - 2" Plumbing	1
-- FRC Jack Strap (EA)	1
-- Gauge - 2-1/2" Dia. Press -30 to +600	1
Speedlays - Two (2) 1.75" Module Front (2") (CAFS)	1
-- FRC Jack Strap (2)	1
-- Gauge - 2-1/2" Dia. Press -30 to +600 (2)	1
-- Cover - Aluminum Crosslay	1
Water Level Gauge - FRC Tank Vision - Operator Panel	1
---BODY SECTION---	
Vision Pumper Body Construction (General)	1
-- Integral Construction	1
-- Vision Poly Body Construction (Detailed)	1
-- Rear Tow Eyes - Below Tailboard (2)	1
-- Vision Body - Compt Construction	1
-- Vision Body - Fenders and Liners	1
-- Hose Bed Required Vision	1
-- Vision Body - Hose Bed Interior w/Black Overlays	1
-- Hose Bed Capacity Vision Pumper	1
-- Vision Bed Floor (Blk CoPoly)	1
-- Hose Bed Divider(s) - Adj. Poly	1
-- FRC Jack Strap (Each)	2
-- No Hose Bed Cover (Dealer Or Customer Provided)	1
-- Vision Body - Fasteners	1
-- Vision Body - Treadplate & Trim	1
-- Rubrail - Black Rubber	1
-- Folding Steps - Left Side Front Body (3)	1
-- Folding Steps - Right Side Front Body (3)	1
-- Folding Steps At Rear (6) (Three Each Side)	1

-- Access Handrails - 10" long (4) (Top Front & Rear)	1
No Rear Vertical Handrails (See Telescoping Lights)	1
-- Rear Crossrail - Horizontal (1)	1
-- 1000 Gallon Tank - Poly	1
-- Tank Overflow - 4"	1
-- Foam Tank - 30 Gallon Integral Poly (1)	1
-- Vision Body - Subframe	1
-- Vision Body - Fenderettes - Anodized Aluminum	1
-- Tailboard - Vision (Recessed)	1
-- 164" Left CoPoly Compt - Shallow Hi - Forward Full	1
-- 164" Body - Hi Side Compt Doors - Roll-Up	1
-- 164" Body - Right CoPoly Compt - Shallow Hi-Side	1
-- 164" Body - Hi Side Compt Doors - Roll-Up	1
-- Rear CoPoly Compt - Closed Lower	1
-- Vision Rear Roll Up Door - Approx 55-66"	1
-- Brushed Finish Roll Up Door (Rear)	1
-- Doors	1
-- Robinson Roll-Up Door Construction	1
-- Brushed Finish Roll Up Doors (Side)	1
-- Ladder Compt - Vertical Right	1
-- Ladder Capacity - 24 ft 2-Sec & 14 ft Roof	1
-- Ladder Capacity For One (1) Folding Ladder	1
-- Pike Pole Tubes (2)	1
-- Suction Hose Mount Left Slide-In (2) Hoses	1
Wheel Well Air Bottle Compts. (4)	1
Unistrut Shelving Tracks (Each Compt)	7
The following compartments shall have unistrut track installed:	
---Each of the side and rear compartments.	
Adjustable Shelving - Aluminum (Each)	5
Shelving shall be located as follows:	
1.) One (1) in the front driver (left) side compartment #1 - lower.	
2.) One (1) in the rear driver (left) side compartment #3 - lower.	
3.) One (1) in the front officer (right) side compartment #4 - lower.	
4.) One (1) in the rear driver (left) side compartment #6 - lower.	
5.) One (1) in the rear compartment #7.	
-- Alum. Roll-Out Tray(s) 500 lbs. 100% Ext. (Each)	1
The tray(s) shall be located as follows:	
---On the floor of rear compartment #7.	
---PAINT, STRIPING, AND LETTERING---	1
Paint Finish	1

-- Paint Color - Match Chassis	1
-- Wheel Rims - As Provided with Chassis	1
Lettering - Vinyl - 60" 3" Letters	1

NOTE: The lettering layout shall be provided at order entry.

Reflective Striping	1
-- 6" Reflective Stripe	1
-- Reflective Stripe Color - WHITE	1
-- Reflective Stripe Design - Straight - NFPA Height	1
Rear Chevron Striping	1
-- Chevron 6" Stripes	1
-- Chevron Colors - (Red & Yellow)	1

---12 VOLT ELECTRICAL SECTION---	1
12V & Multiplex System	1
Master & Warning Light Switches	1
D.O.T. Running Lights - LED	1
License Plate Holder & Light	1
Midship Turn Signal - LED Whelen 52	1
Tail & Back Up Lights - Whelen 64 LED	1
-- 4 Light Bezel For Whelen Directionals	1
Step Lights At Rear (One Each Side)	1
Step Lights Front Body (One Each Side)	1
Compt LED "Strip" Lighting (ROM) (Roll Doors) HD	1
-- Door Open Switch and Warning Light - Roll Up Doors	1
-- "Do Not Move Apparatus" Light in Drivers Compartment	1
Ground Lighting (With Chassis)	1
Ground Lights - Pumper Module & Tailboard (4) (LED)	1
Lights - Unity Deck (2)	1
Warning Lights (HD Pumper)	1
-- Whelen Warning Light Package (LED)	1
-- Whelen Light Bar 72" FN72QLED (Chassis Provided)	1
-- Whelen Lower A (2) 600 LED - Front Cab (CHASSIS)	1
-- Whelen - Lower Zones B & D - 600 Series LED	1
-- Whelen - Lower Zones B & D - Color - Red - (6)	1
-- Whelen - Upper C - (2) LED Beacons	1
-- Whelen - Upper C - Red	1
-- Whelen - Lower Zone C - 600 Series LED (2)	1
-- Whelen - Lower Zones C - Red (2)	1
-- Whelen - Certificate of Certification	1
-- Traffic Advisor Whelen TAM65 LED 36" - 6 Lamp	1
-- Recess Mount Directional Light Bar	1
Siren Control - Supplied with Chassis	1
Siren Speaker - Supplied with Chassis	1
-- FRC Evolution 12 Volt Bottom Raise Tele Lights	2
-- Located On Apparatus Rear	2
-- Remote Light Switch - In Cab & Pump Panel	2

---EQUIPMENT SECTION---

Equipment to be Supplied	1
10 ft Duo #585-A Alum Fold Ladder	1
14 ft Duo #775-A Alum Roof Ladder	1
24 ft Duo #900A Alum 2-Section	1
Suction Hose - Clear Kocheck - 6" x 10'	2
Wheel Chocks/Folding - Up To 44" Wheel	1
Folding Wheel Chock Bracket - Horiz - 44"	1
Purchaser NFPA Responsibility	1