MES SHIPMAN'S FIRE EQUIPMENT CO.



TABLE OF CONTENTS

1

# SUTPHEN

## PROPOSAL

**TO THE:**
Ledyard Fire Company
Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, CT 06339

**DATE:** August 4, 2022

We hereby propose and agree to furnish the following firefighting equipment upon your acceptance of this proposal:

**One (1) Sutphen Engine / Tanker Apparatus Complete and Delivered for the Total Sum of ..... $628,927.71**

The unit shall be manufactured completely in accordance to the following proposal and delivered in approximately **20 - 22** months from the date of the contract signing or purchase order, subject to delays from all causes beyond our control.

This proposal shall be valid for thirty (30) days. If the contract or purchase order is not received within this proposed duration, we reserve the right to extend, withdraw, or modify our proposal, including pricing, delivery times, and prepayment discounts as applicable.

Respectfully submitted,

*Jim Lyons*

MES | SHIPMAN'S FIRE EQUIPMENT CO.

Jim Lyons
MES / Shipman's Fire Equipment Co.
Authorized Representative for Sutphen Corporation
(860) 941-1429

2

Liberty Mutual. SURETY

**BID BOND** 5197

KNOW ALL BY THESE PRESENTS, That we, SUTPHEN CORPORATION

of 6450 Eiterman Rd, Dublin, OH 43016

(hereinafter called the Principal), as Principal, and Liberty Mutual Insurance Company

(hereinafter called the Surety), as Surety are held and firmly bound unto TOWN OF LEDYARD, CT

741 Colonel Ledyard Highway, Ledyard, CT 06339

(hereinafter called the Obligee) in the penal sum of

Ten Percent of Amount bid Dollars ( 10% of Amount Bid )

for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, That WHEREAS, the Principal has submitted or is about to submit a proposal to the Obligee on a contract for

ONE SUTPHEN COMMERCIAL TANKER

NOW, THEREFORE, If the said Contract be timely awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing, and give bond, if bond is required, with surety acceptable to the Obligee for the faithful performance of the said Contract, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 29th day of July, 2022.

Witness

Wayne McVaugh Witness

SUTPHEN CORPORATION (Seal)
Principal

President
Drew Sutphen
Title

Liberty Mutual Insurance Company

By
Sara Owens Attorney-in-Fact

LIBERTY MUTUAL INSURANCE COMPANY INCORPORATED 1912 MASSACHUSETTS

LMS-10053 05/18

Liberty Mutual. SURETY

# LIBERTY MUTUAL INSURANCE COMPANY

## FINANCIAL STATEMENT — DECEMBER 31, 2021

### Assets

| | |
|---|---|
| Cash and Bank Deposits | $2,234,770,744 |
| *Bonds — U.S Government | 4,250,615,811 |
| *Other Bonds | 16,983,165,862 |
| *Stocks | 20,075,458,019 |
| Real Estate | 182,250,567 |
| Agents' Balances or Uncollected Premiums | 7,607,687,836 |
| Accrued Interest and Rents | 120,173,987 |
| Other Admitted Assets | 14,076,622,575 |
| **Total Admitted Assets** | **$65,530,745,401** |

### Liabilities

| | | |
|---|---|---|
| Unearned Premiums | | $9,106,965,847 |
| Reserve for Claims and Claims Expense | | 25,279,158,493 |
| Funds Held Under Reinsurance Treaties | | 315,537,902 |
| Reserve for Dividends to Policyholders | | 1,726,291 |
| Additional Statutory Reserve | | 139,634,000 |
| Reserve for Commissions, Taxes and Other Liabilities | | 8,638,106,801 |
| **Total** | | **$43,481,129,334** |
| Special Surplus Funds | $178,192,363 | |
| Capital Stock | 10,000,075 | |
| Paid in Surplus | 11,804,736,755 | |
| Unassigned Surplus | 10,056,686,874 | |
| **Surplus to Policyholders** | | **22,049,616,067** |
| **Total Liabilities and Surplus** | | **$65,530,745,401** |

LIBERTY MUTUAL INSURANCE COMPANY INCORPORATED 1912 MASSACHUSETTS

* Bonds are stated at amortized or investment value; Stocks at Association Market Values.
The foregoing financial information is taken from Liberty Mutual Insurance Company's financial statement filed with the state of Massachusetts Department of Insurance.

I, TIM MIKOLAJEWSKI, Assistant Secretary of Liberty Mutual Insurance Company, do hereby certify that the foregoing is a true, and correct statement of the Assets and Liabilities of said Corporation, as of December 31, 2021, to the best of my knowledge and belief.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Corporation at Seattle, Washington, this 8th day of March, 2022.

T A Mikolajewski

Assistant Secretary

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 1/31/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
The Graham Company
The Graham Building
1 Penn Square West
Philadelphia PA 19102-

CONTACT NAME: Rich Ogle/Camila Simao
PHONE (A/C, No, Ext): 215-567-6300 FAX (A/C, No): 215-525-0242
E-MAIL ADDRESS: Ogle_unit@grahamco.com

| INSURER(S) AFFORDING COVERAGE | NAIC # |
|---|---|
| INSURER A : Travelers P&C Co of America | 25674 |
| INSURER B : Charter Oak Fire Insurance Company | 25615 |
| INSURER C : Travelers Indemnity Company | 25658 |
| INSURER D : | |
| INSURER E : | |
| INSURER F : | |

INSURED SUTPHEN-01
Sulphen East Corporation
30 Sutphen Place
White Lake, NY 12786

**COVERAGES** **CERTIFICATE NUMBER:** 20222337 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| C | X COMMERCIAL GENERAL LIABILITY | | | Y-630-5073A295-IND-22 | 2/1/2022 | 2/1/2023 | EACH OCCURRENCE | $ 1,000,000 |
| | [ ] CLAIMS-MADE [X] OCCUR | | | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) | $ 1,000,000 |
| | | | | | | | MED EXP (Any one person) | $ 5,000 |
| | | | | | | | PERSONAL & ADV INJURY | $ 1,000,000 |
| | GEN'L AGGREGATE LIMIT APPLIES PER: | | | | | | GENERAL AGGREGATE | $ 2,000,000 |
| | [ ] POLICY [ ] PRO-JECT [X] LOC | | | | | | PRODUCTS - COMP/OP AGG | $ 2,000,000 |
| | OTHER: | | | | | | | $ |
| B | AUTOMOBILE LIABILITY | | | BA-5073A295-22-14 | 2/1/2022 | 2/1/2023 | COMBINED SINGLE LIMIT (Ea accident) | $ 1,000,000 |
| | X ANY AUTO | | | | | | BODILY INJURY (Per person) | $ |
| | [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS | | | | | | BODILY INJURY (Per accident) | $ |
| | [ ] HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY | | | | | | PROPERTY DAMAGE (Per accident) | $ |
| | | | | | | | Garagekeepers Limit | $ 1,000,000 |
| A | X UMBRELLA LIAB X OCCUR | | | CUP-1T26382A-22-14 | 2/1/2022 | 2/1/2023 | EACH OCCURRENCE | $ 5,000,000 |
| | [ ] EXCESS LIAB [ ] CLAIMS-MADE | | | | | | AGGREGATE | $ 5,000,000 |
| | DED [ ] RETENTION $ | | | | | | | $ |
| A | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N | | | UB-8R526952-22-14-G | 2/1/2022 | 2/1/2023 | X PER STATUTE [ ] OTH-ER | |
| | ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] N/A (Mandatory in NH) | | | | | | E.L. EACH ACCIDENT | $ 500,000 |
| | If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | E.L. DISEASE - EA EMPLOYEE | $ 500,000 |
| | | | | | | | E.L. DISEASE - POLICY LIMIT | $ 500,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

**CERTIFICATE HOLDER**

EVIDENCE OF INSURANCE

**CANCELLATION**

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Kenneth J. Sweet

SUTPHEN™

FAMILY OWNED
SINCE 1890

**STATEMENT OF**
**FINANCIAL CONDITION**

To Whom it May Concern:

Sutphen Corporation has been in operation for over 130 years; making it the oldest continuously owned and operated fire apparatus manufacturer in the country. Sutphen Corporation is family owned and has never been bankrupt or reorganized.

Sutphen Corporation is a privately owned company, we cannot provide financial statements for bidding purposes. However, a financial statement may be provided after award of contract.

Sincerely,

Gregory Mallon

Gregory Mallon, CFO

Sutphen Corporation
PO Box 158 • Amlin, OH 43002-0158
6460 Eiterman Road • Dublin, OH 43016-8711
Tel 614 889-1005 • Toll Free 800 848-5860 • Fax 614 889-0874
www.sutphen.com • Sutphen@sutphencorp.com

# Finance Proposal

While not request we have included a finance (lease) proposal for the town's consideration. (See following)

We have included options for 5, 7 & 10 years, with either a 1st regular payment due in 1 year, or a 2nd option with a 2-year deferred payment option (to match anticipated delivery). We can also get creative and provide an interest only' payment in one year, with regular annual payments thereafter, which helps save some money on the accrued interest on the agreement. With the 2-year deferral, please note that the 10-year plan is reduced to a total of 9 payments over a 10 year period (because of the 2 year deferral).

The towns fiscal year begins each July 1st, so we can customize the plan to match the towns fiscal year, or any budgeted funds as well.

If you have any questions, please let me know and I will be happy to have our leasing partner speak directly with you.

MES SHIPMAN'S FIRE EQUIPMENT CO.

215 S. Seth Child Road
Manhattan, KS 66502
Phone: 888.777.7850
Mobile: 785.313.3154
Fax: 888.777.7875

August 1, 2022

To: Jim Lyons @ MES/Shipmans Fire Equipment
From: Blake J. Kaus
**Customer Name: Ledyard, CT**
Equipment: One Sutphen/KW Pumper Tanker
Delivery: Estimated 20-24 months

**Option 1**

| | | | | |
|---|---|---|---|---|
| Total Cost: | $ | 628,927.71 | Payment Frequency: | Annual |
| Down Payment: | $ | - | First Payment: | One year from closing |
| Trade In: | $ | - | | |
| **Amount Financed:** | **$** | **628,927.71** | | |

| Term in Years: | 5 | 7 | 10 |
|---|---|---|---|
| Payment: | $140,457.66 | $103,989.13 | $76,747.96 |
| Factor: | 0.223329 | 0.165344 | 0.122030 |
| Rate: | 3.79% | 3.79% | 3.79% |

**Option 2**

| | | | | |
|---|---|---|---|---|
| Total Cost: | $ | 628,927.71 | Payment Frequency: | Annual |
| Down Payment: | $ | - | First Payment: | Two years from closing |
| Trade In: | $ | - | | |
| **Amount Financed:** | **$** | **628,927.71** | | |

| Term in Years: | 5 | 7 | 9 |
|---|---|---|---|
| Payment: | $145,786.62 | $107,934.48 | $86,973.35 |
| Factor: | 0.231802 | 0.171617 | 0.138288 |
| Rate: | 3.79% | 3.79% | 3.79% |

- Fixed interest rate for the terms provided unless otherwise stated.
- The quoted interest rate is valid for 30 days from the date of the proposal. To lock in the interest rate, a credit submission would be required, and a credit approval attained within the same 30 day period. This financing is to be executed and funded within 30 days of the date of the proposal, or Lessor reserves the right to adjust the interest rate. The proposal is subject to credit review and approval of mutually acceptable documentation.
- This proposal has been prepared assuming the lessee is bank qualified and that the proposed lease qualifies for Federal Income Tax Exempt Status for the Lessor under Section 103 of the IRS Code.
- **THERE ARE NO DOCUMENTATION OR CLOSING FEES ASSOCIATED WITH THIS PROPOSAL**

Sincerely,

Blake J. Kaus

VP, Director of Leasing
blakekaus@clpusa.net

# Top 11 Reasons to Finance

1. **Save Money** – By purchasing the equipment or vehicles you need now, you can reap the benefits of a lower per-unit price today and, with a quantity purchase, eliminate potential costs incurred with future price increases. A purchase today can reduce the costs of maintaining outdated vehicles and equipment.

2. **Predictable Budgets** – With a finance plan in place, you retain fixed and predictable payments for your equipment & vehicle budgets. Why? Because you eliminate the unknowns associated with what the future price may be.

3. **Firefighter Safety** – Through a new equipment purchase, every firefighter has access to the latest and safest technology available. Why take risks with outdated equipment?

4. **Morale** – Who doesn't like new vehicles or equipment! In lieu of purchasing only part of the equipment you need with budgeted funds or delaying your purchase altogether, you can purchase equipment for all firefighters at one time. New vehicles and equipment also help recruitment!

5. **Compatibility** – You shouldn't have to worry about compatibility while on scene, therefore by financing all the equipment you need at one time, you ensure 100% compatibility within your department.

6. **Quick & Easy** – Financing your equipment or vehicle is quick & easy. Just contact a CLP Representative and they can get the process started the same day you call.

7. **Simplifies Inventory Management** – By purchasing what you need at one time through a finance plan, all the equipment can be tested and maintained at the same interval, the same way, and at the same time, thus reducing the challenges and additional costs involved with the scheduled and maintenance of non-congruent equipment.

8. **Replacement Schedule** – By purchasing in this fashion, a department can more easily and readily plan for the next round of vehicle or equipment replacement, as there would be an easily identifiable start and stop date.

9. **Replacement Schedule** – By purchasing in this fashion, a department can more easily and readily plan for the next round of vehicle or equipment replacement, as there would be an easily identifiable start and stop date.

10. **Warranty coverage** – New equipment carries a product warranty that will provide you peace of mind knowing you have the best equipment available, with a clear path to resolve any issues, without the stress of paying for repair costs.

11. **NFPA Compliance** – With ever changing NFPA standards, you can bring your department up to standards with one purchase vs. several purchases over several years.

COMMUNITY LEASING PARTNERS

**Community Leasing Partners**
Division of Community First National Bank
www.clpusa.net

**Blake Kaus**
888-777-7850
blakekaus@clpusa.net

*Your municipal financing experts.*

SUTPHEN

# PURCHASE AGREEMENT

## FOR SUTPHEN FIRE APPARATUS

THIS AGREEMENT, made and entered into this ____ day of _____, 20_____by and between SUTPHEN CORPORATION of Dublin, Ohio, hereinafter called "SUTPHEN" and the Ledyard Fire Company/Town of Ledyard of Ledyard, Connecticut, hereinafter called "PURCHASER",

WITNESSETH:

1. PURCHASE: Purchaser hereby agrees to buy and Sutphen hereby agrees to sell and furnish to Purchaser the apparatus and equipment according to the Sutphen Proposal attached hereto and made a part hereof, and to deliver the same as hereinafter provided.

2. PAYMENT: Purchaser agrees to pay for said apparatus and equipment the total purchase price of Six Hundred Twenty-Eight Thousand, Nine Hundred Twenty-Seven Dollars and Seventy-One Cents. ($628,927.71) based on 100% payment made within 30 days of contract signing.

3. DELIVERY: The apparatus and equipment being purchased hereunder shall be delivered to Purchaser at Ledyard Fire Headquarters within approximately 20 - 22 months after the receipt and acceptance of this agreement at Sutphen's office, provided that such delivery date shall be automatically extended for delays beyond Sutphen's control, including, without limitation, strikes, labor disputes, riots, civil unrest, pandemics, war or other military actions, sabotage, government regulations or controls, fire or other casualty, or inability to obtain materials or services.

4. SUTPHEN WARRANTIES: Sutphen warrants the apparatus purchased here under as set forth in the warranty included with bid proposal.

5. TESTING SHORTAGES: The apparatus shall be tested per NFPA #1901 at Sutphen's manufacturing facility. Purchaser agrees that the apparatus and equipment being purchased hereunder will not be driven or used in any manner until it is paid for in full, provided, however, that if there are any minor shortages, Purchaser may withhold a sum equivalent to the retail purchase price of any equipment shortages at the time of delivery and may use the apparatus and equipment during this period.

in the Franklin County Court of Common Pleas, Columbus, Ohio, and the parties hereto consent and submit to the general jurisdiction of this court. All of the terms and provisions of this Agreement shall be binding upon and inure to the benefit of and be enforceable by Sutphen, Purchaser, their successors and assigns.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be duly executed and attested by its duly authorized representatives, effective as of the date below when accepted at Sutphen Corporations offices.

SUTPHEN CORPORATION

By Jim Lyons
Sales Representative

Accepted at office
SUTPHEN CORPORATION
6450 Eiterman Road
Dublin, Ohio 43016

By_____

Title_____

Date_____

PURCHASER

THE_____

By _____

Title_____

Date_____

By_____

Title_____

Date_____

3

# LEDYARD FIRE DEPARTMENT

# SUTPHEN PROPOSAL

## CLARIFICATIONS TO PUBLISHED SPECIFICATIONS

- Thank you for inviting us to present a proposal for your consideration. We are offering a product that meets the intent of the specifications as close as possible. Due to the current state of the world economy, with unprecedented parts shortages and order backlogs, we must take some exceptions to your specification. We welcome an opportunity to meet with you and review the proposal to clarify any concerns you may have. We would appreciate this opportunity prior to your final decision.

- **Price Guarantee:** Currently Sutphen will only guarantee our bid price for 30 calendar days. If you need more time you will need to make a request, in writing, for us to forward to our corporate office for consideration.

- **Penalty Clause:** We do not agree to the penalty clause. We are in the mists of a worldwide parts and material shortage, in all industries. We have no control over supplier issues or shortages. Additionally, we have no control over the production of the Kenworth cab/chassis. If the town insists on enforcing a penalty clause, Sutphen will agree but the town must accept a longer delivery-build time, of at least 90 additional days.

- **Dunn & Bradstreet Report:** Sutphen Corporation is a privately owned company. We do not provide any financial statements for bidding purposes. Please see the Statement of Financial Condition included within our proposal.

- **Delivery:** Under your heading of "Delivery" we are taking full exception to having a private 3rd party inspect the vehicle. No 3rd party knows our vehicle as we do. Our proposal includes a Dealer Pre-Delivery Inspection process which will be conducted by MES/Shipman's based in Waterford, CT.

    - **Pump Test:** The truck will be 3rd party pump tested for compliance with NFPA 1901 standard at the factory prior to it leaving. A certificate of compliance will be provided. If the department wished a second pump test at Shipman's, add $500.00 to our bid price.

- **Chassis Delivery:** Chassis delivery is outside of our control as this is a 3rd party supplied product. Delivery timeline will ultimately not be known until ordered. However, Kenworth advises 24 months is now common and for us to not expect it delivered sooner. Thus, the chassis will most likely be a 2024/2025 model. The chassis/cab is being offered per the specification contained within our proposal. No Auxiliary air reservoir is available from Kenworth currently.

- **Chassis Bumper:** Kenworth advised they are not currently offering a 10" extended front bumpers on the model chassis requested. We are providing the

standard Kenworth bumper which affords a shorter overall length. If you must have the extended front bumper Sutphen can add this onto the chassis. Add $5463.71 to our bid price. Also note that additional delivery time will be required.

- **Air Horns:** Grove Manufacturing, the maker of Stutterton air horns, has gone out of business. We are including Hadley brand air horns.

- **Electric Siren Speaker:** Will be mounted behind the cab grill.

- **Wig-Wag Headlights:** The wig-wag feature is not available.

- **Valves:** We are offering Akron brass valves in lieu of Elkhart. Valves come with a 10-year warranty direct from Akron.

- **Master Intake / Discharge Gauges:** Shall be 4" in diameter.

- **Monitor:** Elkhart advises the Cobra RF monitor is no longer available. They recommend the replacement, a Cobra EXM2 monitor which is what we are offering.

- **Body Construction:** We are exceeding your specification and are offering all body panels and compartments fabricated out of 304 stainless steel.

- **Body Compartments:** Your specification has specific body compartment dimensions. It's not reasonable to expect one manufacturer to meet another's specifications. Each manufacturer has different manufacturing methods and designs. We are offering a body and compartmentation that meets the intend of your specification.

- **Electrical System:** Per our conversation with Assistant Chief Willis, we are offering our standard body electrical system, which is 12-volt circuits and relays. Standard rocker style switches are included for all component operations. Multiplex systems are available but at a much higher cost. Additionally, our electrical engineering division advised that matching up to the Kenworth electrical system would be better with the 12-volt standard wiring.

- **Anodize Aluminum Trim Bottom of Compartments:** Because we are offering a stainless-steel body, we attempt to minimize the introduction of contrasting materials to prevent electrolysis. On the bottom of all body compartments, we are including Protec clear strips for protection from scratching.

- **Beaver Tails:** Beaver tail design option is not available on this tanker model.

- **Compartment Layout:** Shelving, tool boards etc... can be adjusted to your desire. This would be address at the pre-construction conference.

# LEDYARD FIRE DEPARTMENT

## SUTPHEN PROPOSAL

- **Hose Bed Dividers:** Based on your indicated hose load, only one hose bed divider is required. We are including one (1) divider.

- **Folding Steps:** For safety reasons we are including three (3) folding steps on each side of the pump module to access the dunnage area. These can be removed at the pre-construction conference for a credit if you desire. We would rather error on the side of safety then not include them.

- **Cab Brow Scene Light:** There is insufficient room under the cab light bar to mount the scene light. We have incorporated it into the light bar. This will be reviewed at the pre-construction conference. Other makes and models of scene lights are available and may be an option you want to consider.

- **Cab Side Light Bars:** Not included within our proposal.

- **Body Warning Lights:** Will not be mounted on aluminum treadplate boxes. Light will be mounted directly to the body.

- **Installation of Customer Antenna's:** Sutphen will installed two (2) customer supplied antennas and cables.

- **Hose Bed Cover:** You have conflicting request. In one area you ask for a vinyl hose bed cover and the back flap to have lettering on it. In another are you are asking for black webbing rear flap. We cannot put lettering on webbing. We are therefore including a solid vinyl hose bed cover and vinyl rear flap with lettering. This can be modified or changed at pre-construction if you wish.

- **Crosslay Cover:** We are offering an aluminum treadplate top cover with black webbing sides for your crosslay hosebed.

- **Rear Work Lights:** Shall be FireTech model FT-2000 F-B.

- **Cab Paint Warranty:** Will be standard Kenworth offering. See Kenworth proposal.

- **Body Paint Warranty:** Our standard paint warranty shall apply. See the warranty statement contained within our proposal.

4

# Ledyard Volunteer Fire Company and the Town of Ledyard

Bid Specifications
for a
2022 Tanker/Pumper Fire Apparatus

#2022-15

**Ledyard Fire Company New Apparatus Committee**

| | |
|---|---|
| Fire Chief | Jonathan Mann |
| Chairperson | Todd Willis |
| Chairperson | Zachary Willis |

**Town Of Ledyard**

| | |
|---|---|
| Mayor | Mr. Fred Allyn III |
| Administrator of Emergency Services | Mr. Stephen Holyfield |

# GENERAL INSTRUCTIONS

It is the sole responsibility of the bidder that his or her proposal reaches the destination listed above on time. No phone bids or late proposals will be accepted. Postal delays or delivery schedules will not be considered justifiable reasons for late bids. Only one bid per vendor will be acceptable. Two or more bids by one vendor is unacceptable and will be cause for all bids from that bidder to be ***REJECTED. "NO EXCEPTIONS"***. Bids are to be sealed and marked FIRE APPARATUS BID. Two hard copies shall be received no later than August 4, 2022, at 2:00 p.m. at which time the bids will be opened and read aloud in the Mayor's Office. Any bids received after August 4, 2022, at 2:00 p.m. will be returned, unopened, to the bidder. The bids will be reviewed by the Ledyard Fire Company District #1 Inc. Truck Committee within 30 days.

Bidders must submit their proposals in writing and in accordance with the enclosed specifications. The Town of Ledyard reserves the rights to reject any and all bids which are not considered in the best interest of the Town of Ledyard and the Ledyard Fire Company District #1 Inc.

## INTENT OF BID SPECIFICATION

It is the intent of these specifications to describe the furnishing of a Class A Pumper Tanker Fire Engine. The apparatus shall be the manufacturers latest "Top of the line" model meeting these specifications. The unit shall be ready for immediate operation at the time of delivery the following details are assumed to be in addition to requirements of NFPA Standard #1901. Any questions and/or apparent conflicts shall be brought to the attention of the Apparatus Committee, Ledyard Fire Company 11 Fairway Dr Ledyard CT, 06339 at least five working days prior to the opening of the bids. Items not specifically covered in the following specifications shall meet the requirements of NFPA Standards #1901 current edition.

The truck shall be provided with the minimum equipment required by category A of the sectors which pertain to the type of apparatus being specified unless otherwise called out in the following specifications. Any specified equipment shall be taken to intend that said equipment are the only items to be supplied.

Each bidder shall provide proof that their manufacturer maintains and follows current NFPA Standard #1901 and Federal/State of Connecticut Department of Transportation standards. "NO EXCEPTIONS".

The purpose of this specification is to cover the furnishing and delivery to the Ledyard Fire Company District #1 Inc. of complete and soundly engineered apparatus equipped as hereinafter specified. Each bidder is to provide with the bid proof of full-time employment of a registered licensed, certified engineer qualified in the state of the manufacturer's location.

The construction, materials and equipment in these specifications have been researched and found to be acceptable and in the best interests of the Ledyard Fire Company District #1 Inc. In the consideration of material considered equal to, the final decision of equality shall be made by

All bidders shall provide with their bid a financial statement. This shall be by means of a current Dunn and Bradstreet Report as well as a current income and balance report of the firm.

The bidder shall provide a certificate of insurance for product liability for not less than $3,000,000.00 (THREE MILLION DOLLARS). "NO EXCEPTIONS". All bidders must show proof of Worker's Compensation Insurance, a minimum of $100,000/$300,000, Bodily Injury Liability Insurance, and a minimum of $50,000 Property Damage Liability.

# PERFORMANCE AND TEST

A road test will be conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more will be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axles shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus.

A. The apparatus, when fully equipped and loaded, shall have not less than 25 % nor more than 50 % of the weight on the front axle, and not less than 50 % nor more than 75 % on the rear axle.

B. The apparatus must be capable of accelerating to 45 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed rpm of the engine.

C. The service bakes shall be capable of stopping fully loaded vehicle in 35 feet at 20 mph on level concrete highway.

D. The apparatus, fully loaded, shall be capable of obtaining a speed of 60 mph on a level concrete highway with the engine not exceeding its governed rpm (full load).

## FAILURE TO MEET TEST REQUIREMENTS

In the event the apparatus fails to meet the test requirements of these specification on the first trials, second trials may be made at the option of the bidder within thirty (30) days of the date of the first trials. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Failure to comply with changes as the purchaser may consider necessary to conform to any clause of the specifications, within thirty (30) days after notice is given to the bidder of such changes shall also be cause for rejection of the apparatus.

Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the Fire Company during the above specified period with the permission of the bidder shall not constitute acceptance.

## MANUALS

- The unit shall have been inspected and completely serviced prior to delivery by the Ledyard Fire Company District #1 Inc. private service center at the expense of the manufacturer.
- Complete servicing shall include as a minimum, fluid levels, and filters as required.
- Complete inspection of all vehicle systems.
- The entire unit shall be cleaned prior to delivery.
- A four-hour pump test shall be conducted. This will be from draft not to exceed more than ten-foot lift, hydrant type of test will not be acceptable.
- An eight-hour training session on full operation of apparatus is to be conducted. Pump time not included in these eight hours.

# TESTING COMPLIANCE STANDARD

## Hose Bed Capacity

The hose bed shall have the capacity to store the following hose from the driver side to the officer side. 500' of 3" and 1000' of 5" supply hose.

## Overall Height Restriction

The apparatus shall have overall height restriction of 11' 6" (unloaded condition).

The height of the apparatus shall be measured with no water/foam in the water/foam tank, no equipment, no ground ladders and no hoses.

## Overall Length Restriction

The completed unit shall have a maximum overall length restriction of 35'.

## NFPA Compliance

The supplied components of the apparatus shall be compliant with the NFPA 1901 current edition.

## Equipment Capacity

Equipment allowance on the apparatus shall be 1000 lbs. This allowance is in addition to the weight of the hoses and ground ladders listed in the shop order as applicable.

# AIR SYSTEM OPTIONS

## Air Inlet Auto-Eject

A Kussmaul Air Auto-Eject #091-28 airline disconnect shall be installed for the air inlet connection. The airline will automatically disconnect when the vehicle is started. A Red weatherproof gasketed cover, which automatically closes when the airline is ejected, shall be supplied. Location shall be determined by committee at a later date.

## Isolated Auxiliary Air Reservoir

The air system shall have an additional 1738 cu. in. isolated reservoir. The supply side of the reservoir shall be equipped with a check valve and an 85-psi pressure protection valve.

Specified options shall be plumbed to the isolated air tank.

## Auxiliary Air Tank Plumbing

The auxiliary air reservoir shall be plumbed to air primer.

## Air Horns

Dual stutter air horns shall be provided, connected to the chassis air system. The horns shall be mounted in the front bumper of the vehicle. A pressure protection valve shall be installed to prevent the air brake system from being depleted of air pressure. Air horns shall be controlled by the steering wheel horn, a switch shall be provided to switch from air horn to factory horn. In addition to a pull chain that is accessible for both the driver and officer.

# ENGINES & TRANSMISSIONS

## Vehicle Speed

The maximum speed shall be electronic limited to 60 MPH as required by NFPA 1901.

## Engine

The chassis shall be equipped with a Cummins X15 Fire/Emergency six-cylinder, EPA compliant, electronic engine.

The engine rating shall be 565 HP rating, 1850 lb-ft Torque @ 1150 RPM, 2100 RPM Governed Speed

# CAB DOOR OPTIONS

### Cab Door Interior Striping

Reflective striping shall be installed on commercial cab doors, visible when the door is open, meeting NFPA requirement of 96 sq. in. coverage for each door.

# MISC EXTERIOR CAB OPTIONS

### Label ``Diesel Fuel Only``

Located above each fuel filler housing shall be a metallic label that designates" Diesel Fuel Only" requirements. It shall be black with white or equivalent contrasting letters a minimum of 1/2" high.

# SEATS

Driver's seat shall be a Kenworth Air ride seat (Most current model).
Officers seat shall be a non-air ride Kenworth seat.

# MISC. INTERIOR CAB OPTIONS

### Cab Console

The console shall be centrally located and shall allow the driver and/or officer access to all components while seated with seat belts secured.

The console shall be constructed of aluminum smooth plate with a black Zolatone finish. The top surface shall have a non-reflective material for increased visibility of labels and controls.

All switches located on the console shall be clearly labeled and shall be back lit for easy operation and visibility. Switch locations will be determined and approved by the apparatus committee at a later date.

All Camera and Dump functions shall be integrated into the console. Location will be provided for the install of three mobile radio remote heads.

# CAB ELECTRICAL OPTIONS

Each compartment seam shall be sealed using a permanent pliable silicone caulk. The walls of each compartment shall be machine-louvered for adequate ventilation.

An externally mounted compartment top shall be provided and constructed of a 1/8" (.125") aluminum treadplate.

# BODY COMPARTMENTS

## Driver Side Compartments

The four (4) driver side compartments shall be constructed from 3003 H14 1/8" (.125") smooth aluminum plate. The compartments shall be modular in design and shall not be a part of the body support structure. Compartment floor shall be covered with 1/8" (.125") aluminum diamond plate.

There shall be one (1) full height compartment ahead of the rear wheels. This compartment shall be approximately 36" wide 26" deep on the bottom and 14" deep on the top.

There shall be (2) compartments located above the rear wheels. The compartment shall be equally sized and centered above the rear wheels.

There shall be one (1) Full height compartment located to the rear of the rear wheels. The compartment width shall be determined by body length specifications and the distance between the rear wheels and end of the body. Depth shall be approximately 26" on the bottom and 14" on the top.

# BODY COMPT RIGHT SIDE

## Officer Side Compartments

The four (4) officer side compartments shall be constructed from 3003 H14 1/8" (.125") smooth aluminum plate. The compartments shall be modular in design and shall not be a part of the body support structure. Compartment floor shall be covered with 1/8" (.125") aluminum diamond plate.

There shall be one (1) compartment located ahead of the rear wheels. This compartment shall be approximately 36" wide, depth shall be approximately 26" and height shall be determined by the height of the wheel well compartments.

There shall be two (2) compartments located above the rear wheels, The compartments shall be no taller than 12" and shall be centered above the rear wheels

## Beavertails

Two (2) angled beavertails shall be provided at the rear of the body. The beavertails shall be a part of the body framework and provide additional support to the tailboard. Each beavertail shall be constructed of formed 1/8" (0.125") aluminum treadplate and includes removable outside panels for access to internal wiring and bolt-on accessories.

## Rear Access Handrails

Handrails shall be provided at the rear of the body to assist ground personnel accessing the tailboard step and hose bed area. Each handrail shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety and shall be mounted between chrome stanchions.

The handrails shall be located- two (2) handrails, one (1) on each side, appropriately sized handrail mounted vertical on the trailing edge of the body and appropriately sized handrail(s) mounted horizontal below the rear hose bed opening.

## Rear End Assembly

The rear end shall be set-up as tanker and shall have no rear body compartment.

The rear end shall be constructed of vertical and horizontal extrusions with interlocking smooth plate upper and lower panels. The lower center area shall have a smooth plate panel area that shall allow for a Newton tank dumping application.

The vertical, horizontal, and smooth plate panels shall have a sanded finish.

# DOORS

## Single Compartment Door

A single compartment door shall be constructed using a box pan configuration. The outer door pan shall bevel and shall be constructed from 3/16" (0.188") aluminum plate. The inner door pan shall be constructed from 3/32" (0.090") smooth aluminum plate and shall have nutsert fittings to attach hold-open hardware. The inner pan shall have a 95-degree bend to form an integral drip rail.

The compartment door shall have a 1" x 9/16" (1" x 0.43") closed-cell "P" EPDM sponge gasket meeting ASTM D-1066 2A4 standards installed around the perimeter of the door to provide a seal that is resistant to oil, sunlight, and ozone.

A drain hole shall be installed in the lower corner of the inside door pan to assist with drainage.

The compartment doors shall be securely attached to the apparatus body with a full-length stainless steel 1/4" (0.25") rod piano-type hinge isolated from the body and compartment doors with a dielectric barrier. The doors shall be attached with machine screws threaded into the doorframe.

The doors shall have a gas shock-style hold-open device. The gas shocks shall have a 30 lb. rating and be mounted near the top of the door (when possible).

An anodized aluminum drip rail shall be mounted over the compartment opening to assist in directing water runoff away from the compartment.

These doors will be installed on the officer's side lower front and rear, the driver's side lower front and rear.

# TRAYS

## Running board Suction Tray

A running board suction hose storage tray "floating style" shall be provided and located on the officer side running board.

The tray shall be "floating style" mounted and constructed of 1/8" (.125") aluminum diamond plate (exterior) with a smooth sanded surface interior. The bottom of the tray shall have removable aluminum slats and drain holes to allow water drainage from hose stored in the tray. The tray shall have a 3" tapered front corner to protect tray against debris.

# COVERS

## Rear Hose Bed Cover

A cover constructed of heavy-duty black nylon cargo netting shall be installed at the rear apparatus hose bed.

The bottom of the cargo netting shall be mechanically attached to the hose bed. The cover shall be attached to comply with the latest edition of NFPA 1901.

Cover shall secure the hose load at the rear open back of the hose bed and shall compliment the separate top cover that secures top of body open areas over hose load.

## NFPA Hose Bed Cover

The hose bed area will be covered by a black canvas cover secured on three sides. Cover will display the unit number in a contrasting (white) lettering.

The pump module design and mounting shall be separate from the body to allow the pump module and body to move independently of each other in order to reduce stress from frame twisting and vibration.
The exterior surface of the pump module framework shall have a sanded finish.

### Pump Module Mounting

The pump module shall be attached to the chassis using four (4) center bonded isolation mounts and a steel mounting frame. The isolation mounts shall be 2.75" diameter and mount to the chassis with two (2) 4" x 4" x .312" A36 steel angles.

### Pump Access

A pump service access door shall be provided at the front of the pump module. The door shall be secured with two (2) thumb latches. (Access door not provided on fixed cab applications)

### Pump Module Running Boards

The pump module shall include a running board on each side. The running boards shall be in accordance with NFPA in both step height and stepping surface. The running boards shall be formed from .125" aluminum treadplate.

### Stepping Surface

Each running board shall include a multi-directional, aggressive gripping surface incorporated into the treadplate. The surface shall extend vertically from the diamond plate sheet a minimum of .125". Gripping surfaces shall be circular in design, a minimum of 1" diameter and on centers not to exceed 4". Each running board shall be bolted on to the pump module and be easily removable for replacement in the case of damage.

### Pump Panel Opening

The panel opening on the pump module shall be 39" wide.

### Pump Module Height

The pump module height shall be 80".

## PUMP PANELS

### Zolatone Pump Panels

The driver and officer side pump panels shall have a black zolatone painted finish.

hose. One (1) 1/4" (.25") smooth aluminum plate fixed dividers with a sanded finish shall be provided to separate the two (2) hose storage areas.

# WATER TANK

## Tower Locations

Fill tower locations. Water fill tower to be located driver side of hose bed.

## 3000 Gallon Water Tank

A 3000 gallon (U.S.) "T" booster tank shall be supplied.

The booster tank shall be constructed of polypropylene material. The booster tank shall be completely removable without disturbing or dismounting the apparatus body structure. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal.

The booster tank top, sides, and bottom shall be constructed of a minimum 1/2" (0.50") thick black UV-stabilized copolymer polypropylene. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The tank cover shall be constructed of 1/2" thick polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 3/8" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions.

The tank shall have a combination vent and manual fill tower with a hinged lid. The fill tower shall be constructed of 1/2" polypropylene and shall be a typical dimension of 8" x 8" outer perimeter (subject to change for specific design applications). The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall have a 1/4" thick removable polypropylene screen and a polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid.

The booster tank shall have two (2) tank plumbing openings. One (1) for a tank-to-pump suction line with an anti-swirl plate, and one (1) for a tank fill line. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates per the tank fill inlet size.

The sump shall be constructed of a minimum of 1/2" polypropylene. The sump shall have a minimum 3" N.P.T. threaded outlet for a drain plug per NFPA. This shall be used as a

A second sump shall be added to the tank bottom for customer's special applications.

### Newton Dump Provision [Qty: 3]

Special provisions for mounting a Newton dump valve on the poly water tank shall be provided.

## TANK PLUMBING

### Tank Fill 2 Elkhart Unibody Valve

One (1) 2" pump-to-tank fill line having a 2" manually operated full flow valve. The valve control shall be located at the pump operator's panel and shall always visually indicate the position of the valve. The fill line shall be controlled using a chrome handle with an integral tag.

The valve shall be an Unibody series with stainless steel ball and dual adjustable neoprene seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the ball when in a throttle position and water is flowing through it.

The valve shall be of the unique Elkhart Drop-out or Swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance, and decreased friction loss.

### Tank Dumps

Side tank dumps 1080 or 1085 shall be provided. Located one on each side of the apparatus in between the rear wheels and 1 centered on the rear of the apparatus.

The tank dumps shall be Newton Kwik Dump and shall include a 10" x 10" flip-up valve plate for maximum water flow. Each dump assembly shall have a 5018 extension that shall extend the dump out past the side of the apparatus.

The dump valve and dump extension shall be electrically actuated. The exterior surface of the dump assembly shall be stainless steel.

### Tank To Pump 3 Elkhart Unibody Valve

One (1) manually operated 3" Elkhart valve with 4" plumbing shall be installed between the pump suction and the booster tank in order to pump water from the tank. The valve control shall be located at the pump operator's panel and shall visually indicate the position of the valve at all times.

The storage compartment shall be accessed through a hinged 1/8" (.125") aluminum diamond plate door with a push-button latch. The door shall be wired to the door ajar indicator light in the cab and shall be interlocked with the parking brake per NFPA.

The storage compartment shall be located below officer side compartment top below the ladders and above the DOT light assembly on the rear of the apparatus. The door will open in the downward direction. This compartment will be duplicated on the driver's side below the portable tank.

## Hard Suction Storage

An aluminum storage tray shall be provided and shall be capable of storing the supplied 6" x 15` hard suction hose.

The storage tray shall include a minimum of four (4) NFPA compliant hose restraints.

- One tray shall be located on the driver side above compartments.
- One tray shall be mounted to the top of the ladder storage track,
- Storage tray and suction hose shall not block any lighting on the high side of the apparatus.

## Ladders

The length of ladders capable of being stored shall be the following: 35' 3-section and 16' roof ladder.

## Ladder Storage Rack

A Zico QUIC-LIFT Ladder Access System (LAS) ladder rack shall be provided. The rack shall lower the ladders approximately 31" from the stored position to provide a safe and convenient height for unloading and loading.

The rack shall be electrically operated by two (2) durable high cycle 12-volt actuators and controlled by a 30 amp two-pole double-throw momentary switch located at the pump module area. The control switch location shall allow the operator to monitor operations, monitor positioning of apparatus mounted equipment in the ladder racks travel path and ground personnel while lowering and raising the rack.

The ladder rack shall be self-locking in any position during operation. A visual signal shall be provided to indicate when the ladder rack is in motion by two (2) yellow flashing lights installed one (1) on each side of the rack.

The rack shall also be wired through the door ajar indicator light located in the cab to alert the driver that the rack is not stowed if the park brake is released.

The rack will be wired additionally to an indicator light on the center console that shows if it is in the stored or lowered position.

### Intermediate Rear Step

One (1) intermediate rear step shall be provided above the rear Newton dump.

The intermediate step shall be constructed of 3/16" (.187") aluminum treadplate. The step shall include a multi-directional, aggressive gripping surface incorporated into the treadplate. The surface shall extend vertically from the diamond plate sheet a minimum of 1/8" (.125"). Gripping surfaces shall be circular in design, a minimum of 1" diameter and on centers not to exceed 4".

## MISC. BODY OPTIONS

### Mud Flaps

Black mud flaps provided for the body wheel wells.

### Splash Guard

A one (1) piece splash guard shall be installed under the body full width behind the rear axle. The design and material of the splash guard shall be smooth rubber backing with front polly bristles designed to keep rear of vehicle clean of road spray and debris. The splash guard to be 18"H x 96"L. Rear will have in red Lettering TAN14KER.

### Body Mainframe

The body mainframe shall be entirely constructed of aluminum. The complete framework shall be constructed of 6061T6 and 6063T5 aluminum alloy extrusions welded together using 5356 aluminum alloy welding wire.

The body mainframe shall include 3" x 3" 6061-T6 aluminum 3/8" (0.375") wall crossmember extrusion or 3" x 3" I-beam section aluminum extrusion depending on the application at the front of the body. A solid 3" x 3"" I-beam" section aluminum extrusion shall be provided the full width of the body forward and rearward of the rear wheel well. The crossmembers shall be designed to support the compartment framing and shall be welded to 1-3/16" x 3" (1.188" x 3") solid 6063-T5 aluminum frame sill extrusions. The frame sill extrusions shall be shaped to contour with the chassis frame rails and shall be protected from contact with the chassis frame rails by 5/16" x 2" (0.31" x 2") fiber-reinforced rubber strips to prevent wear and galvanic corrosion caused when dissimilar metals come in contact.

### Body Mounting System

The main body shall be attached to the chassis frame rails with six (6) of 5/8" (0.625") diameter steel U-bolts. This body mounting system shall be used to allow easy removal of the body for major repair or disassembly.

## Hose Bed Dividers Hand Hold

There shall be a hand hole cut-out(s) on the trailing edge of each hose bed divider. The cut-out(s) is specifically sized for use in adjusting of the hose bed divider.

## Floor Matting

This unit shall have all applicable compartment floors, shelves and trays covered with a heavy-duty black DRI-DEK matting.

## Rub Rail

The pump area module(s) and body shall have rub rails mounted along the sides.

The rub rail shall be C-channel in design and constructed of 3/16" thick 6463T6 anodized aluminum extrusion. The rub rail shall be 2.75" high x 1.25" deep and shall extend beyond the body width to protect compartment doors and the body side. The rub rail depth shall allow marker and/or warning lights to be recessed inside for protection.

The top surface of the rub rail shall have minimum of five (5) raised serrations. Each serration being a minimum of .1" in height and with cross grooves to provide a slip-resistant edge for the tailboard step and pump module running board areas. The rub rail shall be mounted a minimum of 3/16" off the pump module and body with nylon spacers. The ends of each section shall be provided with a finished rounded corner piece.

## Anodize Aluminum Trim

A anodize aluminum trim shall be located at the bottom edge of all body compartment openings with painted edge (as applicable). The trim shall provide added protection of the painted surface of the body when equipment is removed from the compartment.

## Tank Dump Plates and Doors

The tank dumps shall have diamond plate dump panels. Included shall be lift-up diamond plate doors with spring loaded hinges.

## Commercial Tandem Axle Tanker

Commercial chassis tandem axle wheelbase modification. Adds 1" to wheelbase due rear axle offset between commercial and custom chassis.

## Body Mod High HP Commercial Engines

Body or pump module shall be notched to accommodate the exhaust canister for high horsepower engines (370 HP or more) on the commercial chassis. The top mount right side

The entire pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 psi (207 MPa). All metal moving parts in contact with water shall be of high-quality bronze or stainless steel. Pump body shall be horizontally split in two sections, for easy removal of impeller assembly including wear rings and bearings from beneath the pump without disturbing pump mounting or piping.

The pump impeller shall be hard, fine grain bronze of the mixed flow design and shall be individually ground and hand balanced. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and of wrap-around double labyrinth design for maximum efficiency.

The pump shaft shall be heat-treated, corrosion-resistant stainless steel and shall be rigidly supported by three (3) bearings for minimum deflection. The sleeve bearing is to be lubricated by a force fed, automatic oil lubricated design, pressure-balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and shall be splash-lubricated. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of the gearbox.

Two (2) 6" diameter suction ports with 6" NST male threads and removable screens shall be provided, one each side. The ports shall be mounted one (1) on each side of the midship pump and shall extend through the side pump panels. Inlets shall come equipped with long handle chrome caps.

## Discharge Manifold

The pump system shall utilize a stainless-steel discharge manifold system that allows a direct flow of water to discharge valves. The manifold and fabricated piping systems shall be constructed of a minimum of Schedule 10 stainless steel to reduce corrosion.

## Pump Shift

The pump shift shall be pneumatically controlled using a power shifting cylinder.

The power shift control valve shall be mounted in the cab and be labeled" PUMP SHIFT". The apparatus transmission shift control shall be furnished with a positive lever, preventing accidental shifting of the chassis transmission. This control valve shall be in reach of the driver.

A green indicator light shall be located in the cab and be labeled" PUMP ENGAGED". The light shall not activate until the pump shift has completed its full travel into pump engagement position.

A second green indicator light shall be in the cab and be labeled" OK TO PUMP". This light shall be energized when both the pump shift has been completed and the chassis automatic transmission has obtained converter lock-up (4th gear lock-up). This will also be duplicated on the pump panel.

# PUMP OPTIONS

## Steamers, Flush+1

The pump 6" steamer intake(s) shall be mounted approximately 1" from the pump panel to back of cap when installed. The "Flush+1" dimension can vary + or - 1-1/4" or as practicable depending on the pump module width and options selected.

All electric MIV's.

Location: driver's side, officer's side.

## Zinc Anodes

The zinc anodes help prevent damage caused by galvanic corrosion within the fire pump. The system provides a sacrificial metal which helps to diminish or prevent pump and pump shaft galvanic corrosion. One anode will be located on the suction side and one will be located on the discharge side of the pump.

## Thermal Relief Valve

A Hale thermal relief valve that protects the pump from overheating shall be provided. The valve shall automatically dump a controlled amount of water to the ground when the pump water exceeds the pre-set temperature of the relief valve.

## Inlet Valve

A Hale Master Intake Valve (MIV-E) shall be provided for the specified intake. The large diameter inlet valve shall be capable of achieving an NFPA test rating of 1500 GPM through a single 6" suction hose.

The inlet valve shall be operated by a 12 VDC electric motor with a remote switch provided at the pump operator's position. The 12 VDC motor shall be provided with an automatic resetting, thermally compensated over-current protection circuit breaker to protect the 12 VDC motor and apparatus electrical system. The gear actuator on the valve will cycle from full closed to full open in not less than three (3) seconds. A hand-controlled pump panel mounted manual override (knob style) shall be provided.

An indicator light panel shall be located at the pump operator's position to show valve open, closed, or traversing from open to closed.

A built-in adjustable pressure relief valve shall be provided. The pressure relief valve shall be factory set to 125 psi. The pressure relief valve shall provide overpressure protection for the suction hose even when the intake valve is closed.

## Trident Primer

A Trident air operated priming system shall be installed. The unit shall be of all brass and stainless-steel construction and designed for fire pumps of 1,500 GPM or more. Due to corrosion exposure no aluminum or vanes shall be used in the primer design. The primer shall be three-barrel design with ¾" NPT connection to the fire pump.

The primer shall be mounted above the pump impeller so that the priming line will automatically drain back to the pump. The primer shall also automatically drain when the panel control actuator is not in operation. The inlet side of the primer shall include a brass "wye" type strainer with removable stainless-steel fine mesh strainer to prevent entry of debris into the primer body.

The system shall create vacuum by using air from the chassis auxiliary air tank through a two-barrel multi-stage internal "venturi nozzles" within the primer body. The noise level during operation of the primer shall not exceed 75 Db.

## Air Flow Requirements

The primer shall require a minimum of 15.6 cubic foot per minute air compressor and shall be capable of meeting drafting requirements at high idle engine speed. The air supply shall be from a chassis supplied "protected" air storage tank with a pressure protection valve. The air supply line shall have a pressure protection valve set between 70 to 80 PSIG.

## Primer Control

The primer control shall have a 3 position switch labeled , Auto Prime, OFF and PRIME. The valve shall direct air pressure from the air brake storage tank to the primer body. To prevent freezing, no water shall flow to and from the panel control on the driver's side.

## Warranty

The primer shall be covered by a five (5) year parts warranty.

# INTAKES

## Left Intake 2.5 Elkhart Unibody Valve

One (1) 2 1/2" suction inlet with a manually operated 2 1/2" Elkhart Unibody valve with chrome valve face shall be provided on the left side of the apparatus at the pump panel.

The valve shall be an Elkhart Unibody series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless-steel ball when in a throttle position and water is flowing through it.

The valve control shall be located at the pump operator panel and shall always visually indicate the position of the valve.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

## Cross Lay 1.5 Elkhart Manual Unibody [Qty: 2]

One (1) cross lay discharge shall be provided at the front area of the body. The cross lay shall include one (1) 2" brass swivel with a 1-1/2" hose connection to permit the use of hose from either side of the apparatus.

The cross lay hose bed shall consist of a 2" heavy duty hose coming from the pump discharge manifold to the 2" swivel. The hose shall be connected to a manual operated 2" Elkhart valve. The valve shall be an Elkhart Unibody series with a stainless-steel ball, and dual UHMWPE seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless ball when in a throttle position and water is flowing through it.

The valve shall be of the unique Elkhart drop-out or swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The Unibody series valve shall have the following features:

- The system shall include a valve-controller and valve actuator.
- The valve control shall be located at the pump operator's panel and shall always visually indicate the position of the valve.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance, and decreased friction loss.

## Left Panel 2.5 Elkhart Unibody Valve

One (1) 2-1/2" discharge outlet with a manually operated Elkhart valve shall be provided at the left-hand side pump panel.

The valve shall be an Elkhart Unibody series with a stainless-steel ball and dual adjustable neoprene seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the acetal ball when in a throttle position and water is flowing through it.

The valve shall be of the unique Elkhart Drop-out or Swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve control shall be located at the pump operator panel and shall always visually indicate the position of the valve.

The Unibody series valve shall have the following features:

- The system shall include a valve-controller and valve
- The valve control shall be located at the pump operator's panel and shall always visually indicate the position of the valve.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance, and decreased friction loss.

### Blitz Fire Rear Discharge

One (1) discharge with 3" piping to a 2.5" coupling will be installed on the driver's side rear of the apparatus.

The Blitz Fire Master Stream will be mounted on the rear for easy access.

### Decontamination Discharge

A .75" decontamination discharge outlet shall be provided on the driver side pump panel. The outlet shall include a 1/4 turn valve, hose bib connection and pressure reducing valve.

### Deck Gun Location

Deck gun piping shall be positioned centered in deck gun channel. This location shall allow for optimal operation of a deck gun monitor once installed.

### Booster Reel Discharge

A 1-inch discharge outlet shall be provided to the dunnage area for connection to a hose bed reel on the driver's side of the apparatus. The Valve shall be manually operated.

## DISCHARGE OPTIONS

### Elkhart 8598 Extender

Elkhart model 8598 3" electrically actuated extender shall be installed. The waterway shall be capable of being lowered to deck level (or into a monitor well) for storage and transportation and shall be capable of being raised to an extended height of 18" using panel mounted controls. These controls shall be capable of moving the waterway in either the raised or lowered position while maintaining the ability to horizontally rotate the monitor device 360 degrees. There shall be an accessible manual override control for use in the event power failure occurs. A power cable shall be supplied for connection from the panel control box to the extender.

### Discharge/Intake Bezel

Innovative Controls intake and/or discharge swing handle bezels shall be installed to the apparatus with mounting bolts. These bezel assemblies will be used to identify intake and/or discharge ports with color and verbiage. These bezels are designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The specified assemblies feature a chrome-plated panel-mount bezel with durable UV resistant polycarbonate inserts. These UV resistant polycarbonate graphic inserts shall be sub-surface screen printed to eliminate the possibility of wear and protect the inks from fading. All insert labels shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards.

## Pressure Governor and Engine Throttle

### FRC InControl TGA401-D00

Fire Research InControl series TGA401-D00 pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 5 1/2" high by 10 1/2" wide by 2" deep. The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 1 3/4" from the front of the control module. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.

The following continuous displays shall be provided:

- Pump discharge; shown with four daylight bright LED digits more than 1/2" high
- Pump Intake; shown with four daylight bright LED digits more than 1/2" high
- Pump discharge and intake pressure gauge shall have an accuracy of ±3 percent over the full scale.
- Pressure / RPM setting; shown on a dot matrix message display
- Pressure and RPM operating mode LEDs
- Throttle ready LED
- Engine RPM; shown with four daylight bright LED digits more than 1/2" high
- Check engine and stop engine warning LEDs
- Oil pressure; shown on a dual color (green/red) LED bar graph display
- Engine coolant temperature; shown on a dual color (green/red) LED bar graph display
- Transmission Temperature: shown on a dual color (green/red) LED bar graph display
- Battery voltage; shown on a dual color (green/red) LED bar graph display.

The dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and nighttime operation.

## GAUGE IC 10 LED TANK LEVEL WATER, ADDITIONAL

An additional Innovative Controls brand water tank level gauge shall be located at the officer rear to provide a high-visibility display of the water tank water level. Ten (10) high-intensity light emitting diodes (LED`s) on the display module shall have a 3-dimensional lens allowing the full, 3/4, 1/2, 1/4, and refill levels to be easily distinguished at a glance within full 180-degree visibility.

The display module shall be protected from vibration and contamination with the components being encased in an encapsulated plastic housing. The long life and extreme durability of LED indicators eliminates light bulb replacement and maintenance. Color coded cover plates shall complete the assembly of the display module to the pump panel. Each display level can be set independently for maximum reliability.

The display shall provide a steady indication of fluid level despite sloshing inside of the tank when the vehicle is in motion due to an" anti-slosh" feature.

## GAUGE IC 10 LED TANK LEVEL WATER MINI

Innovative Controls miniature tank indicator shall be installed in the cab dash. The indicator shall show the volume of water in the tank on five (5) easy to see super bright LED`s with auto dimming feature. The miniature indicator shall receive input information over a single wire from a tank primary indicator.

## WHELEN STRIP LIGHT PLUS XL SUPER LED TANK LIGHT

One (1) Innovative Controls brand water tank level gauge shall be located at the pump operator`s panel to provide a high-visibility display of the water tank water level. Ten (10) high-intensity light emitting diodes (LEDs) on the display module shall have a 3-dimensional lens allowing the full, 3/4, 1/2, 1/4, and refill levels to be easily distinguished at a glance full 180-degree visibility.

The display module shall be protected from vibration and contamination with the components being encased in an encapsulated plastic housing. The long life and extreme durability of LED indicators eliminates light bulb replacement and maintenance. Color coded cover plates shall complete the assembly of the display module to the pump panel. Each display level can be set independently for maximum reliability.

The display shall provide a steady indication of fluid level despite sloshing inside of the tank when the vehicle is in motion due to an "anti-slosh" feature.

In addition to the pump panel mounted lights there shall be Whelen strip light plus XL super LED tank level gauges. The system shall be controlled by an Innovative Controls tank level driver module that is integral of the NFPA required pump panel mounted tank level light assembly.

The remote light heads shall be arranged as follows.

The electrical system shall be pre-wired for optional computer modem accessibility to allow service personnel to easily plug in a modem to allow remote diagnostics.

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

Any electrical junction or terminal boxes shall be weather-resistant and located away from water spray conditions.

For superior system integrity, the networked multiplex system shall meet the following minimum component requirements:

- The network system must be Peer to Peer technology based on RS485 protocol. No one module shall hold the programming for other modules. One or two modules on a network referred to as Peer to Peer, while the rest of the network consists of a one master and several slaves is not considered Peer to Peer for this application.
- Modules shall be IP67 rated to handle the extreme operating environment found in the fire service industry.
- All modules shall be solid state circuitry utilizing MOS-FET technology and utilize Deutsch series input/output connectors.
- Each module that controls a device shall hold its own configuration program.
- Each module should be able to function as a standalone module. No "add-on" module will be acceptable to achieve this form of operation.
- Load shedding power management (8 levels).
- Switch input capability for chassis functions.
- Responsible for lighting device activation.
- Self-contained diagnostic indicators.
- Wire harness needed to interface electrical devices with multiplex modules.
- The grounds from each device should return to main ground trunk in each sub harness using ultrasonic splices.

## Wiring

All harnessing, wiring and connectors shall be manufactured to the following standards/guidelines. No exceptions.

- NFPA 1901-Standard for Automotive Fire Apparatus
- SAE J1127 and J1127
- IPC/WHMA-A-620 – Requirements and Acceptance for Cable and Wire Harness Assemblies. (Class 3 – High Performance Electronic Products)

the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a test fail.

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

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

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

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system shall be permitted during this test. However, an alarm sounded by excessive battery discharge, as detected by the system required in NFPA 1901 Standard, or a system voltage of less than 11.7 volts DC for a 12-volt nominal system, for more than 120 seconds, shall be considered a test failure.

**4. Low voltage alarm test:**

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts DC for a 12-volt nominal system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure NFPA Required Documentation

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

- Documentation of the electrical system performance tests required above.
- A written load analysis, including:

a. The nameplate rating of the alternator.
b. The alternator rating under the conditions.
c. Each specified component load.
d. Individual intermittent loads.

## Multiplex Display

The V-MUX multiplex electrical system shall include a Vista IV touch screen color display.

The display shall have the following features:

- Aspect ratio of 16:9 (Wide Screen)
- Diagonal measurement of no less than 7"
- Touch screen design with "virtual" switch capability

### Electrical Connection Protection

The vehicle electrical system shall be made more robust by the application of a corrosion inhibiting spray coating on all exposed electrical connections on the chassis and body. If equipped with an aerial device, the exposed connections on the aerial components shall also be protected.

The coating shall use nanotechnology to penetrate at the molecular level into uneven surfaces to create a protective water repellant film. The coating shall protect electrical connections against the environmental condition's apparatus are commonly exposed to.

## LIGHT BARS

### Light Bar Mounts

One (1) fabricated high light bar mounts for use with Whelen Pioneer front brow light mounted center of the cab above the windshield.

### Front Light Bar Color(s)

The front light bar shall be provided with the following color LED modules: Red/White with clear lenses

If applicable, includes side facing light bars when colors are the same.

### Light Bar LED Filters

The Whelen Freedom IV light bar(s) shall be provided with filters for all colored LEDs'. The filters shall cover each individual LED module.

### Light Bar

A Whelen Freedom IV Series 60" LED light bar model F4X0 with eight (8) LED modules shall be provided; two (2) front corner mounted LED modules, four (4) forward facing LED modules and two (2) side facing LED modules (with front vista windows) or two (2) rear corner LED modules (without front vista windows).

No rear facing LEDs.

The light bars shall have clear lenses.

The white LEDs (if equipped) shall be switched off in blocking right of way mode.

The light bar shall be installed centered on the front cab roof.

## Upper Rear Warning Lights

Two (2) Whelen model L31H Super LED beacons with Red LED with Clear lens domes shall be supplied.

The lights shall be located rear upper body on aerial style brackets to meet Zone C upper requirements.

## Hazard (Door Ajar) Light

There shall be a 2" red LED hazard light installed as specified. The light shall be located on the Interior of the cab roof.

## Warning Lights

Two (2) Whelen M9RC Series Linear Super LED red light heads with clear lens shall be provided with diamond plate boxes. The rectangular lights shall include chrome flanges where applicable.

Location: (1) each side of body on forward upper body corners, (1) each side of body on rearward upper body corners.

## RUBRAIL WARNING LIGHTS

Six (6) red LED emergency lights installed in the rub rail next to the DOT lights. Two (2) Officers side two (2) Drivers side and two (2) in the rear. Lights shall be Whelen.

## Directional Traffic Warning Light

One (1) Whelen TAM65 LED 36" long Traffic Advisor with amber lenses shall be provided.

The directional bar shall include a TACTL5 control head. The control head shall include a remote flash control and end lamp enable/disable feature.

The light shall be installed at rear of body to direct traffic around the apparatus.

## Recessed Directional Light Bar Mount

An area at the rear of the body shall be provided for recess mounting of a directional light bar. The recess shall reduce the opening height of the rear compartment(s) (if applicable).

## Directional Light Bar Control Location

The directional light bar control head shall be in the center console.

## Body Marker Lights

Trucklite LED clearance lights shall be installed as specified.

## Upper Body:

One (1) red LED clearance light each side, rear of body to the side.

## Lower Body:

Three (3) red LED clearance lights centered at rear, recessed in the rub rail.

One (1) red LED clearance light each side at the trailing edge on either side of the apparatus body, recessed in the rub rail.

One (1) amber LED clearance / auxiliary turn light each side front of body, recessed in the rub rail.

A rectangular shaped marker light with a red colored lens shall be installed at the trailing edge on each side of the apparatus body/module, recessed in the rub rail.

## Marker Lights

One (1) pair of Britax model L427.203L.12V LED amber/red marker rubber housed lights shall be provided. The lights shall be located on the rear body corners mounted in the down angle position. The red lenses shall illuminate to the rear of the apparatus and the amber shall illuminate to the front of the apparatus. The lights shall be wired to the marker light circuit.

## Taillights

Three (3) Whelen model M6 series LED (Light Emitting Diode) lights shall be installed in a four (4) light vertical housing each side at rear and wired with weatherproof connectors.

Light functions shall be as follows:

- LED red running light with red brake light in upper position.
- LED amber populated arrow pattern turn signal in middle position.
- LED clear back-up light in lower position.

A one-piece chrome plastic housing shall be mounted around the three (3) individual lights in a vertical position. The lower space will be used by the M6 or equivalent lower NFPA warning light.

# LIGHTS - DECK AND SCENE

## Rear Work Lights

Two (2) FireTech LED lights model FT-WL3500-FT-W shall be installed. The lights shall produce 1,981 effective lumens and have a white housing. The lights shall be switched with a labeled work light switch in the cab.

Location: rear body/beavertail area on the trailing edge up high.

## Hose Bed Lighting

LED rope lighting will be installed around the inside railing of the hose bed.

## Cross Lay Light

A FireTech LED light model WL2000 shall be installed at the rear area of the cross lay to provide cross lay lighting per current NFPA 1901. The cross lay light shall be switched with work light switch in the cab.

# LIGHTS - NON-WARNING

## Engine Compartment Light

There shall be lighting provided in compliance with NFPA to illuminate the engine compartment area. The light wiring circuit shall activate when the cab is tilted, and master power is switched on.

## Pump Compartment LED Light

An LED light shall be provided in the pump compartment area for NFPA compliance. The light shall be wired to operate with the work light switch in the cab.

## LED Pump Panel Light Package

Three (3) TecNiq model E10 LED lights shall be mounted under a light shield directly above each side pump panel. The work light switch in the cab shall activate the lights when the park brake is set.

## LED Pump Panel Light - Additional

One (1) TecNiq model E10 LED light shall be mounted under the light shield, in addition to the existing pump panel lights. The additional light shall be located at the officer side pump panel.

### Back-Up Alarm

An electronic back-up alarm shall be supplied. The 97-dB alarm shall be wired into the chassis back-up lights to signal when the vehicle is in reverse gear.

### 12 Volt DC Power Distribution Module

A Blue Sea model 5032 12 place, split bus fuse block with ground, 12-volt DC power distribution module shall be provided. The module shall provide two isolated groups of six circuits and shall be wired through switched hot and battery hot, and include a battery ground.

Location: behind driver's seat.

## LIGHTS - SCENE

### Bracket Mount Light

One (1) Pioneer Summit Series 12V LED bracket mounted flood light model S30MW 30" long shall be provided. The light shall feature 24 LEDs`. The 135W 12V light shall draw 7.2 amps. A switch shall be provided, accessible to driver, for activation of light.

The light assembly shall be recessed below the rear arrow stick.

A Switch in the cab accessible to the driver shall activate light. Light will also activate when apparatus is placed in reverse.

### Side Scene Light [Qty: 4]

Two (2) Whelen M9 Series M9LZC with chrome flange shall be installed on each side of the body. The lights shall be operated by a switch in the cab accessible to the driver.

The light assembly shall be located high side corners on both sides of body. Not to be obstructed by equipment. Lights shall be mounted next to Whelen M9 warning lights.

The rearmost lights on the apparatus shall activate when the apparatus is placed in reverse.

### Cab Brow Light

One (1) Whelen Pioneer Plus PFH2 LED flood shall be mounted in the center of the cab above the windshield and below the light bar. The 12V light shall draw 12 amps. A switch shall be provided, accessible to driver, for activation of light.

The light assembly will be located under light bar and above windshield.

# EXTERIOR PAINT

## Un-Painted Pump/Pre-Connect Module(s)

All applicable pump application modules shall have a sanded finish (not painted job color). Includes upper and lower pump modules, crosswalk module and/or speedlay/pre-connect module (as applicable). Rear mounted body/pump module shall be painted job color.

Any plumbing extending out past pump panel enclosure must be painted body color.

## Paint Body Large

The apparatus body shall be painted to match the current apparatus color.

Any location where aluminum is penetrated after painting, for the purpose of mounting steps, handrails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, handrails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment.

After the paint process is complete, the gloss rating of the unit shall be tested with a 20-degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

## Commercial Cab Paint

The Kenworth cab shall be painted black by the chassis supplier. The cab will then be painted body color by the body manufacturer.

Paint shall be warranted by the body manufacturer.

# STRIPING

## Striping

Reflective striping shall be provided and installed by the dealer under the instruction of the customer.

## Reflective Stripe in Rub Rail

The reflective stripe in the body rub rail shall be white.

## 10 Year 100,000 Mile Structural Warranty

The apparatus manufacturer shall provide a comprehensive 10 year/100,000-mile structural warranty. This warranty shall cover all structural components of the cab and/or body manufactured by the apparatus manufacturer against defects in materials or workmanship for 10 years or 100,000 miles, whichever occurs first. Excluded from this warranty are all hardware, mechanical items, electrical items, or paint finishes. A copy of the warranty document shall be provided with the proposal.

## 10 Year Stainless Steel Plumbing Warranty

The apparatus manufacturer shall provide a full 10-year stainless steel plumbing components warranty. This warranty shall cover defects in materials or workmanship of apparatus manufacturer designed foam/water plumbing system stainless steel components for 10 years. A copy of the warranty document shall be provided with the proposal.

## 10 Year Paint and Corrosion Warranty

The apparatus manufacturer shall provide a 10-year limited paint and corrosion perforation warranty. This warranty shall cover paint peeling, cracking, blistering, and corrosion provided the vehicle is used in a normal and reasonable manner.

The paint shall be prorated for 10 years as follows:

## Topcoat & Appearance:

(Gloss, Color Retention, Cracking)

| | |
|---|---|
| 0 to 72 months | 100% |
| 73 to 120 months | 50% |

## Coating System, Adhesion & Corrosion:

(Includes Dissimilar metal corrosion, Flaking, Blistering, Bubbling)

| | |
|---|---|
| 0 to 36 months | 100% |
| 37 to 84 months | 50% |
| 85 to 120 months | 25% |

Corrosion perforation shall be covered 100% for 10 years. Corrosion perforation is defined as complete penetration through the exterior metal of the apparatus.

The warranty period shall begin upon delivery of the apparatus to the original user-purchaser. A copy of the warranty document shall be provided with the proposal.

5

# LEDYARD FIRE COMPANY

# TOWN OF LEDYARD, CONNECTICUT

## Proposal

## Sutphen Engine/Tanker Apparatus

## Kenworth T800 Cab/Chassis

## Sutphen Custom Stainless-Steel Body

**Jim Lyons**
**MES/Shipman's Fire Equipment**

**Representing**
**Sutphen Fire Apparatus**

KENWORTH

KENWORTH OF PENNSYLVANIA - DUNMORE (M424)
109 KEYSTONE INDUSTR.PRK
DUNMORE, Pennsylvania 18512

SUTPHEN EAST CORP
INNOVATION DRIVE
LAKE ARIEL, Pennsylvania 18436
United States of America

Randy Rutherford
Cell Phone: 570-656-1024
Office Phone: 570-347-5671
Email: Rrutherford@kwofpa.com

Steve Dorfman

# Vehicle Summary

**Unit**

| | |
|---|---|
| Model: | T800 Series Conventional. |
| Type: | FULL TRUCK |
| Description 1: | T800 Ledyard FD |
| Description 2: | Stationary Grille |

**Application**

| | |
|---|---|
| Intended Serv.: | Fire truck service: Vehicles used in fi |
| Commodity: | Water. |

**Body**

| | |
|---|---|
| Type: | Tank. |
| Length (ft): | 20 |
| Height (ft): | 13 |
| Max Laden Weight (lbs): | 4000 |

**Trailer**

| | |
|---|---|
| No. of Trailer Axles: | 0 |
| Type: | |
| Length (ft): | 0 |
| Height (ft): | 0 |
| Kingpin Inset (in): | 0 |
| Corner Radius (in): | 0 |

**Restrictions**

| | |
|---|---|
| Length (ft): | 75 |
| Width (in): | 102 |
| Height (ft): | 13.5 |

**Chassis**

| | |
|---|---|
| Fr Axle Load (lbs): | 18740 |
| Rr Axle Load (lbs): | 52000 |
| G.C.W. (lbs): | 70740 |
| Road Conditions: | |
| Class A (Highway) | 68 |
| Class B (Hwy/Mtn) | 30 |
| Class C (Off-Hwy) | 2 |
| Class D (Off-Road) | 0 |
| Maximum Grade: | 6 |
| Wheelbase (in): | 242 |
| Overhang (in): | 115 |
| Fr Axle to BOC (in): | 74 |
| Cab to Axle (in): | 168 |
| Cab to EOF (in): | 283 |
| Overall Comb. Length (in): | 405.5 |

**Special Req.**

U.S. Domestic registry, 50-state.

**Approved by:** _____ **Date:** _____

**Note: All sales are F.O.B. designated plant of manufacture.**

| Std/ Opt | Description | Weight |
|---|---|---|
| O | **EPA Emissions Warranty Engine** | 0 |
| S | **PremierSpec** | 0 |
| O | **Gearing Analysis: Balance**<br>power/economy blend results. | 0 |
| O | **Customer's Typical Operating Spd: 52 MPH** | 0 |
| O | **Effective VSL Setting NA** | 0 |
| O | **Engine Idle Shutdown Timer Disabled** | 0 |
| O | **Enable EIST Ambient Temp Overrule** | 0 |
| O | **Eff EIST NA Expiration Miles**<br>Use only with MX and Cummins engines | 0 |
| S | **Air compressor: Cummins 18.7 CFM, Naturally**<br>Aspirated for Cummins X15 engines | 0 |
| S | **Air cleaner: Powercore engine mount 10 in.**<br>w/constant torque SS clamps, pop-up air restriction indicator. Holds 10% more fine dust than 2500. Pop-up indicator is standard. | 0 |
| S | **Fan Hub: Horton 2-Speed for X15** | 0 |
| S | **Cooling module: T8SH/T8B 1440 square inches.**<br>Includes aluminum radiator core, aluminum charge air cooler, translucent surge tank and washer bottle, silicone hoses, and extended life coolant. Drain valve is not available w/Allison transmissions. | 0 |
| S | **EXH: 2021 RH Under DPF/SCR with RH SOC Vertical**<br>tailpipe. Not 2.1m high roof sleepers | 0 |
| S | **Tailpipe: 5 in. single 36 in. 45 degree curved.** | 0 |
| S | **Fuel Filter:PACCAR Standard Service Interval**<br>Fuel/Water Separator. 2017 and Later Emissions | 0 |
| O | **Run Aid:None**<br>*For Fuel Filter | 0 |
| O | **Start Aid:12V Heat**<br>*For Fuel Filter | 1 |
| O | **Kenworth Fuel Cooler**<br>Required for Cummins engines with a single fuel tank. Required for PACCAR MX-13 engine with a single fuel tank and stationary use: High RPM, low vehicle speed, sustained for longer than 1 hour. Optional for all other applications. | 6 |
| O | **Immersion block heater 120V 1500W w/plug under**<br>door on C500, T660, T800 & W900. | 2 |
| S | **Alternator: PACCAR 160 amp, brush type** | 0 |
| S | **Batteries: 3 PACCAR GP31 threaded post (700-730)**<br>2100-2190 CCA dual purpose. | 0 |
| S | **Mitsubishi 105P55 12V Starter with Cummins and PX** | 0 |

| Std/ Opt | Description | Weight |
|---|---|---|
| S | **Power Steering Cooler:Radiator Mounted Air-to-Oil** | 0 |
| O | **Threaded Bushings for taperleaf spring**<br>16K, 18/20K, 22K, 40K replacing rubber. | 0 |

## Rear Axle & Equipment

| | | |
|---|---|---|
| O | **Dual Meritor RT52-185P single reduction rear**<br>axle rated at 52K. Tandem rear axles w/pump. | 353 |
| O | **Rear Axle Ratio - 4.89.** | 0 |
| O | **Dual Rear Brakes 16-1/2x7 in. to 46,001 -52K**<br>Bendix ES-extended service S-cam. | 16 |
| O | **Dual rear heavy duty Brake Drums: cast.**<br>Use HD Gunite Drum when tandem axle with GAWR over 46,000 lbs is selected. | 0 |
| O | **Dual Rear Hubs: Iron hub pilot 11-1/4 in. BC.** | 104 |
| S | **Dual Rear axle automatic slack adjusters.** | 0 |
| S | **Spring Brake: 3030 long stroke dual 30 square**<br>inches travel. Helps keep brakes in adjustment longer. | 0 |
| O | **Bendix 4S/4M anti-lock brake system.** | 0 |
| S | **Interaxle Driveline: 1 Meritor RPL20**<br>Replacing I/A *Use W/ RPL(SD) 25 Main D/L | 0 |
| O | **Rear suspension: Tandem Hendrickson RT523 52K.**<br>54 in. axle spacing. 7.19 in. saddle height & barpin bushing & bronze center bushing. Unladen Height: 12.2 in. Laden Height: 11.1 in. | 899 |
| O | **Delete standard heavy-duty air springs for rear**<br>suspension. | -28 |

## Tires & Wheels

| | | |
|---|---|---|
| O | **Front tires: Goodyear Armormax MSA 385/65R22.5**<br>18PR AP 42.5 in diameter, all position. 19.8 in SLR. On/Off highway. Wide-base tire. in. SLR. | -48 |
| O | **Rear Tires: Goodyear Armor Max Pro Grade MSD**<br>12R22.5 16PR | 336 |
| O | **Rear Tire Quantity: 8** | 0 |
| O | **Front Wheel: Alcoa 82462 22.5x12.25 aluminum,**<br>with Lvl One [TM] High Polish finish, hub-pilot mount. 11000lb. maximum rating. 5.80 in. offset. Air disc brake compatible. | -3 |
| O | **Rear Wheel: Alcoa 88565 22.5x8.25 aluminum,**<br>with Lvl One [TM] High Polish finish, hub-pilot mount. 8000lb. maximum rating. Severe service. Air disc brake compatible. Code is priced per pair of wheels. | -144 |
| O | **Single Front Axle: 2 wheels Dura-Bright Mirror**<br>Polish Dura-Bright outboard surface of aluminum wheels. | 0 |
| O | **Dual Rear Axle Wheels: 4 wheels Dura-Bright** | 0 |

| Std/ Opt | Description | Weight |
|---|---|---|
| **Fuel Tanks & Equip** | | |
| O | **Fuel Tank: 75 US gallon 24.5in. aluminum under** replace. Class 8 fuel tanks w/o locking caps include an anti-siphon device on the filler neck. | -11 |
| O | **DEF tank clear BOC (CBOC), 6.9 gallons.** Requires LH undercab fuel tank. The tank will be located inboard of the LH under cab fuel tank. There is no frame space required to locate this tank. Not for use on sleeper chassis. Standard capacity is calculated by fuel capacity of the vehicle and will accommodate two diesel fill-ups for every DEF fill-up. For 1:1 DEF fuel fill ratio, add 7889204. Not for use with 2.1m models. | -19 |
| O | **6 in. wide lower fuel tank step, for one 22 in.** or 24.5 in. tank LH. | 2 |
| O | **DEF to fuel fill ratio between 1:1 and 2:1.** | 0 |
| O | **Delete Anti-siphon device swaged in place for any** number of fuel tanks. | -1 |
| S | **DEF tank location is LH.** | 0 |
| O | **Location: 75 gal fuel tank LH under cab** | 0 |
| **Cab & Equipment** | | |
| S | **Cab: Curved Glass Conventional.** Cab Includes aluminum & fiberglass fully hucked cab w/ all aluminum bulkhead doors & continuous stainless steel piano-style door hinges. Single electric horn standard. Incandescent exterior lights include diagnosable bulb detection and warning. Trailer cable on tractors includes integrity detection. Standard features include multiplex wiring for interior lights, automated pre-trip inspection (excluding T3 series), short and open check diagnostics. Warning alarm will sound when lights are left on. | 0 |
| O | **Cab door bearing blocks, top & bottom.** | 0 |
| S | **Hood: Sloped Metton Hood W/ Grille & Shell Use** For T800B 1-Piece Requires Engine Mounted Air Cleaner, 1440 Square In. Radiator & 2007+ Engines. | 0 |
| O | **Radiator Mounted Grille for use with W9S or C500** or T880 or T800 standard width sloped hood with 1430 or 1520 Radiator. This code is not applicable to sheet metal hoods. For C500 with 1780 Radiator or T800 FEPTO models, see 8098424. | 5 |
| S | **Cab heater: W/integral defrosters & A/C 45,000** btu cab heater. No sleeper heater/AC. Includes 5 mode rotary control. T660 include filter media. | 0 |
| S | **Steering wheel: 18 in. 4-spoke.** | 0 |
| S | **Adjustable telescoping tilt steering column.** | 10 |
| O | **Four position ignition switch, keyless.** Available for fire truck service & EMT/emergency service only. | 0 |

| Std/ Opt | Description | Weight |
|---|---|---|
| | W/header mounted quick release CB mount. One red power post & one black ground post. Includes dual antenna leads located on the mirror brackets. Includes dual antenna & separate speaker. | |
| S | **Under dash center console: Includes one cupholder** & two 12V outlets. For use w/Autoshift, Ultrashift, & Allison Gen IV only. | 0 |
| S | **Non-self cancelling turn signal: W/column-mounted** headlight dimmer switch & intermittent wiper control. | 0 |
| S | **Electric LH & RH door locks.** | 0 |
| O | **Stainless steel permit panels on cab.** | 13 |
| S | **Kenworth TruckTech+** The Kenworth Remote Diagnostics system provides the Worlds Best reporting of engine and aftertreatment fault codes, as well as enhanced support for the truck owner through rapid communication of fault severity and recommended actions. This option is Standard on all Heavy Duty Kenworths with a PACCAR MX engine, Cummins X15 engine, PX engine or Natural Gas engine. Optional on Medium Duty Kenworths. | 0 |
| S | **Long grabhandle RH side of cab.** | 0 |
| S | **Long grabhandle LH side of cab.** | 0 |
| S | **Grabhandle: LH inside door frame above dash.** | 0 |
| S | **Grabhandle: RH inside door frame above dash.** | 0 |
| S | **Daylite Door: LH/RH includes RH peeper window** | 0 |
| S | **Single air horn under cab.** | 0 |
| S | **Look-Down, Pass. Door, Stainless 8.5x4.4** | 0 |
| O | **Mirror: Dual Kenworth aerodynamic heated** motorized 7 in. x 13 in. mirror w/ chrome shell. LH/RH convex mirrors 5 in. x 7 in. heated. Mirror brackets set for 8 1/2 ft load width. Switch located on door pad. | 26 |
| O | **Electric-powered LH & RH door window lifts.** Switch located on door. | 0 |
| O | **Solid rear wall. Deletes rear cab window.** | -8 |
| S | **One-piece windshield, w/ curved glass.** | 0 |
| S | **Exterior aerodynamic sunvisor w/ integral marker** lights. | 0 |
| O | **4 1/2in. rubber wheelwell fender extension.** | 11 |
| O | **Severe service reinforcements for aluminum cab** sill. | 17 |

| Std/ Opt | Description | Weight |
|---|---|---|
| S | **24 Month TruckTech+ Subscription for Cummins** Engines | 0 |
| O | **Base Warranty: Emissions** 5YR/100K MI - EPA Engine (Does not include CARB Clean Idle sticker) | 0 |

## Miscellaneous

| | | |
|---|---|---|
| O | **GHG Secondary Manufacturer: Does Not Apply** | 0 |
| O | **Additional lead time required for off highway &** /or specialty component truck. | 0 |
| U | **Stall built off highway specialty component** | 0 |
| O | **Warning triangle reflector kit: Shipped loose.** Kit consists of 3 triangles in plastic carrying case. Not floor mounted. | 4 |

## Promotions

## Paint

| | | |
|---|---|---|
| O | **Paint color number(s).**<br><br>N9702 A - 002 CARDINAL RED<br>N9704 B - 03Q FED 17925 WHITE<br>N9720 FRAME N0001 BLACK | 0 |
| O | **Bumper Unpainted** | 0 |
| S | **Day Cab Standard Paint** | 0 |
| O | **2 - Color Cust Design - Day Cab - Lo Complex**<br>Must submit design for approval. A Custom Design and Color Layouts order form is required with all custom designs. When transmitting ETO Electronic Paint Order, please submit all custom forms to Kenworth Sales Department, Attn: Paint Coordinator. Custom paint designs will be reviewed on a case by case basis. Approval or disapproval is at the discretion of Kenworth Truck Company. Consult with your paint coordinator if the chassis paint sketch includes any of the following items: Items attached to the frame or below the frame are to be painted a color that is different than the frame paint color, Items attached to the cab or sleeper are to be painted a color that is different than the cab or sleeper paint color, The requested paint number cannot be identified as a number or type approved by Kenworth. | 0 |
| O | **Non-standard paint color.** | 0 |
| O | **Base coat/clear coat.**<br>The Kenworth Color Selector contains additional instructions, as well as information on Kenworth paint guidelines and surface finish applications. Kenworth is standard with Dupont Imron Elite paint. | 0 |

## Order Comments

| | |
|---|---|
| **Total Weight** | 19,860 |

## Prices and Specifications Subject to Change Without Notice.

Unpublished options may require review/approval.
Dimensional and performance data for unpublished options may vary from that displayed in CRM.

***PRICING DISCLAIMER***

*While we make every effort to maintain the web site to preserve pricing accuracy, prices are subject to change without notice. Although the information in this price list is presented in good faith and believed to be correct at the time of printing, we make no representations or warranties as to the completeness or accuracy of this information. We reserve the right to change, delete or otherwise modify the pricing information which is represented herein without any prior notice. We carefully check pricing specifications, but occasionally errors can occur, therefore we reserve the right to change such prices without notice. We disclaim all liability for any errors or omissions in the materials. In no event will we be responsible for any damages of any nature whatsoever from the reliance upon information from these materials. Please check your order prebills to confirm your pricing information*

## Table of Contents

distribution shall be in accordance with the recommendations of the International Association of Fire Chiefs and National Fire Association (or American Insurance Association). Weight of apparatus shall meet all federal axle load laws.

**DELIVERY**

The apparatus shall be completely equipped as per these specifications upon arrival and on completion of the required tests shall be ready for immediate service in the fire department of the purchaser.

**U.S.A. MANUFACTURER**

Sutphen Corporation is a U.S.A based manufactuer with headquarters located in Dublin, OH and manufactuering facilities in Dublin, OH; Hillard, OH; Urbana, OH and Lake Aerial, PA.

**MANUFACTURER'S EXPERIENCE**

Sutphen Corporation has been in operation for over 130 years; making it the oldest continuously owned and operated fire apparatus manufacter in the country.

Sutphen Corporation is family owned and has never been bankrupt or reorganized.

**FAMA COMPLIANCE**

Sutphen is a current member of the Fire Apparatus Manufacturer's Association.

**PROPOSAL DRAWING**

A general layout drawing depicting the apparatus layout and appearance is provided with the bid. The drawing consists of left side, right side, frontal and rear elevation views. The drawing is a depiction actual apparatus proposed and not of a generic similar product.

**APPROVAL DRAWING**

After the award of bid and pre-construction conference, a detailed layout drawing depicting the apparatus layout and appearance including any changes agreed upon shall be provided for customer review and signature. The drawing will become part of the contract documents. The drawing shall consist of left side,

- Shipman's service center provides 20,000 sq. ft. of repair space. The facility is heated and provides a state-of-the-art security system. All customer vehicles are stored inside at night.

- Services Include: Chassis, Body, Fire Pump, Generator, Aerial, HVAC, Electrical, Drive Train, Brakes, Yearly Service Contracts, Pump Testing & Fleet Maintenance Programs.

- MES / Shipman's is an authorized warranty repair center for all Sutphen products. Additionally, we are a warranty center for: Fire Research, Whelen, Federal, Code 3 & Fire Tech products. Hale, Waterous & Darley Fire Pumps. TFT, Akron & Elkhart water flow products. Smart Power, Harrison and Onan generators.

2. Service Vehicles:

- MES / Shipman's offers road service on an as needed or requested basis.

3. Employees:

- The department encompasses a Service Manager, Service Advisor, Dedicated Parts Person, Shop Forman and four technicians.

- Technicians are EVT trained and certified. Several are ASME certified and master mechanic level.

- Certifications include: Sutphen, EVT, ASME, Cummins, Hale, Waterous, Allison, Fire Research, Akron, Elkhart, Smart Power, Harrison, Onan, Whelen.

4. Service: Hours of Operation:

- Normal hours of operation are Monday - Friday 8:00 AM till 4:30 PM

5. Emergency Contingency Offerings:

- Emergency 24-hour service is available after normal business hours, on weekends and holidays.

MES / Shipman's Apparatus Service Center is available for customer visits/inspections.

**STATE OF CONNECTICUT LICENSE REQUIREMENTS**

LOCAL DEALER

**REAR TOW EYES**

Rear tow eyes shall be provided on the chassis, attached direclty to the chassis frame.

**DIESEL FUEL ONLY LABEL**

A label shall be located over the fuel filler housing labled "DIESEL FUEL ONLY".

**ALTERNATOR**

The chassis shall be provided with an alternator that is sufficient for maintaining the electrical system on the vehicle.
A low voltage alarm, audible and visual, shall be provided.

**BATTERIES**

The battery system shall be a single system consisting of three negative ground, 12 volt batteries, capable of supporting the electrical system. The batteries shall be wired directly to starter motor and alternator.

**BATTERY CHARGER**

A Kussmaul Auto Charge Chief 4012 with remote panel model #091-266-12-40-RCP 40 amp battery charger shall be provided and installed in the cab. The unit shall include a built in touch screen, IP32 rated, and configurable for 3-step or float charging. The charger shall be wired to the 120V shoreline inlet.

**120V SHORELINE INLET & AUTO EJECT**

The apparatus shall be equipped with a 120V shoreline inlet to provide power to the battery charger from an external source. The inlet shall include a Kussmaul 091-55-120 90 Super 20 Auto Eject featuring a 12 volt solenoid which shall eject the shoreline cord away from vehicle path upon sensing engine start. After ejection, a 90 degree weatherproof cover shall snap into position over inlet.

A 20 amp connector shall be provided and shipped loose for connecting the external shoreline cord to the inlet.

**FRONT AXLE & SUSPENSION**

**BRAKES, Front**

The front brakes shall be S-cam drum style. They shall be 16.5" x 5" with heavy-duty return springs, and a double anchor pin design. They shall also have quick-change shoes for fast easy brake relining.

**BRAKES, Rear**

The rear brakes shall be S-cam drum style. They shall be 16.5" x 6" with heavy-duty return springs, and a double anchor pin design. They shall also have quick-change shoes for fast easy brake relining.

**AIR BRAKE SYSTEM**

The vehicle shall be equipped with air-operated brakes. The system shall meet or exceed the design and performance requirements of current FMVSS-121 and test requirements of current NFPA 1901 standards.

Each wheel shall have a separate brake chamber and automatic slack adjusters. A dual treadle valve shall split the braking power between the front and rear systems.

All main brake lines shall be color-coded nylon type. A Bendix AD-9 air dryer shall be provided.

The air system shall be provided with a rapid build-up feature, designed to meet current NFPA 1901 requirements.

A Bendix Tu-Flo 550 13.2 CFM capacity shall be provided.

The system shall be designed so the vehicle can be moved within 60 seconds of startup. The quick build up system shall provide sufficient air pressure so that the apparatus has no brake drag and is able to stop under the intended operating conditions following the 60-second buildup time.

A spring actuated air release emergency/parking brake shall be provided on the rear axle. One (1) parking brake control shall be provided and located on the lower left cab dash within easy reach of the driver. The parking brake shall automatically apply at 35 ±10 PSI reservoir pressure. A Meritor WABCO IR-2 Inversion Relay Valve, supplied by both the Primary and Secondary air systems, shall be used to activate the parking brake and to provide parking brake modulation in the event of a primary air system failure.

Accessories plumbed from the air system shall go through a pressure protection valve and to a manifold so that if accessories fail they shall not interfere with the air brake system.

Two (2) stainless steel guide rods shall be attached, one each side to the front bumper. The guide rods shall be constructed from stainless steel and be attached to the apparatus with corrosion resistant hardware. An amber light shall be provided in each guide rod.

**AIR HORNS**

Two (2) Hadley chrome plated air horns, shall be mounted on each side of the hood. The air horns shall be controlled by the horn ring and a push button on the officer's side dash. A switch on the dash shall be provided to choose between the electric horn and the air horns.

A pressure protection valve shall be placed in-line to prevent the chassis air supply from being depleted.

**ELECTRONIC SIREN**

A Whelen model #295SLSA1 shall be provided. Control head shall be mounted in the center console.

**SIREN SPEAKER**

One (1) Whelen SP123BMC 100 watt weatherproof siren speaker housed in a polycarbonate chrome plated flange shall be provided and wired to the electronic siren.

**SPEAKER MOUNTING**

The electronic siren speaker(s) shall be recessed behind the cab front bumper/grill.

**FEDERAL Q2B SIREN**

There shall be a Federal Q2B-NN siren installed on the face of the front bumper. The siren shall be securely mounted and activated by means of a solenoid and shall include a brake. There shall be rubber dock bumpers on each side of the Q2B siren to prevent damage to the siren grille.

**FOOT SWITCH, DRIVER'S SIDE**

A foot switch for the mechanical siren shall be provided on the driver's side.

**FOOT SWITCH, OFFICER'S SIDE**

The center area between the driver and officer seating positions shall be utilized by a center console fabricated of smooth .125 aluminum painted with a black MultiSpec paint. The console shall include cut outs for switches for operation of the emergency warning system and shall contain the electrical panel for the emergency lighting.

**CAB DOOR INTERIOR STRIPING**

Reflective white striping shall be installed on the inside of each cab door.

**CAB INSTRUMENTATION & CONTROLS**

Gauge Cluster

- The gauge cluster shall consist of the following gauges:
- Electronic speedometer with odometer, trip miles, trip hours, and engine hours
- Tachometer
- Engine Oil Pressure
- Engine Oil Temperature
- Water Temperature
- Fuel Level
- Voltmeter
- Allison Transmission Temperature

A fault code warning system that shall audibly and visually indicate low fuel, low oil pressure, high engine coolant temp, low engine coolant level, and low battery voltage, shall be provided for each function.
An air cleaner restriction gauge (filter-minder) with black bezel shall be mounted on the instrument panel.
Switches & Controls
The following switches and controls shall be provided:

- Keyless Starter Switch
- Emissions System Regeneration Switch
- Hazard Warning Light Switch
- Headlight Dimmer Switch
- Electric DOT Horn Switch
- Parking Light Switch
- Self-Canceling Turn Signal Switch
- Emergency Master
- Siren/Horn Ring Selector Switch
- One (1) 12-volt Power Point

The windshield wipers shall be equipped with a 2-speed switch with wash and intermittent feature (5 pre-set delays).
Heat /Air Conditioner / Defroster

## USB POWER POINT

One (1) 12-volt dual port USB power point shall be provided in the cab.

## VEHICLE DATA RECORDER

A FRC vehicle data recorder as required by the 2009 edition of NFPA 1901 shall be installed. Vehicle data shall be sampled at the rate of 1 second per 48 hours, and 1 minute per 100 engine hours.

Free software is available to allow the fire department to collect the data as needed.

## DRIVER'S SEAT

The driver's seat shall be a high back with air suspension. The seat shall be covered in gray vinyl and shall have a red, three point retractable seat belt.

## HELMET STORAGE

The helmet for the above seat shall be stored in a compartment. A placard shall be provided visible to the riding position warning that injury may occur if helmets are worn while seated.

## PASSENGER'S SEAT

The passenger's seat shall be a high back with fixed suspension. The seat shall be covered in gray vinyl and shall have a red, three point retractable seat belt.

## HELMET STORAGE

The helmet for the above seat shall be stored in a compartment. A placard shall be provided visible to the riding position warning that injury may occur if helmets are worn while seated.

## SEAT BELT WARNING SYSTEM

An FRC SBA 310 seat belt warning system shall be provided, and shall monitor each seating position. Each seat shall be supplied with a sensor that, in conjunction with the display module located on the dash, shall determine when the seat belt was fastened and if the seat is occupied. An icon shall represent that the seat

**FIRE PUMP HALE QMAX-150**

Fire pump shall be midship mounted. The fire pump shall be of the double suction single stage centrifugal type, carefully designed in accordance with good modern practice.

The pump shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI.

The pump body shall be horizontally split, on a single plane, casing type with removable lower casing for easy removal of the entire impeller assembly including wear rings and bearings from beneath the pump without disturbing piping or the mounting of the pump in the chassis.

All moving parts in contact with water shall be of high quality bronze or stainless steel. Easily replaceable bronze labyrinth wear rings shall be provided. Discharge passage shall be designed to accomplish uniform pressure readings as the actual pump pressure. The rated capacity of the fire pump shall be 1500 gallons per minute in accordance with NFPA# 1901.

The pump shaft shall be rigidly supported by three bearings for a minimum deflection. One high lead bronze sleeve bearing shall be located immediately adjacent to the impeller (on side opposite the drive unit). The sleeve bearing shall be lubricated by a force fed, automatic lubrication system, pressure balanced to exclude foreign material. The remaining bearings shall be heavy-duty type, deep groove ball bearings and shall be splash lubricated.

**PUMP TRANSFER CASE – K SERIES**

The drive unit shall be designed of ample capacity for lubricating reserve and to maintain the proper operating temperature. Pump drive unit shall be of sufficient size to withstand up to 18,500 lbs. ft. torque of the engine in both road and pump operating conditions.

The gearbox drive shafts shall be heat treated chrome nickel steel input and output shafts shall be at least 2-3/4" in diameter, on both the input and output shafts. They shall withstand the full torque of the engine in both road and pump operating conditions.

The engagement of the pump transmission shall be of such design so as to permit transfer of power from road to pump operation only after vehicle is completely stopped. The pump shift shall be air actuated from the cab and have both a green "Pump Engaged" light, and a green "O.K.-To-Pump" light. A third green light shall be provided on the pump operator's panel for "Throttle Ready".

The pump drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory.

The booster tank shall be connected to the intake side of the pump with a check valve. The 4" tank to pump line shall run from a bottom sump into the 4" valve. To prevent damage due to chassis flexing or vibration, a short 4" flexible rubber hose coupling shall be used to connect the tank to the intake valve.

**VALVE**

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

**VALVE ACTUATOR**

The valve shall be controlled by an Akron model 9323 electric controller located at the operator's panel. Valve position will be displayed on the LCD screen incorporated into the control head.

**TANK FILL**

A 2" tank fill line shall be provided, using a quarter turn full flow ball valve controlled from the pump operator's panel.

**VALVE**

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

**VALVE ACTUATOR**

The valve shall be controlled by a Class 1 push/pull handle located at the operator's panel.

**INTAKE RELIEF**

There shall be a Task Force Tips A1860 intake relief valve installed on the intake side of the pump. The surplus water shall be discharged away from the pump operator and terminate with Male NST hose thread. System is field adjustable.

**6" PUMP INLET**

A 6" diameter suction port with 6" NST male threads shall be provided, on the left side of vehicle. The inlet shall extend through the side pump panels and come complete with removable strainer and long handle chrome-plated cap.

**INTAKE VALVE**

A Hale Master Intake valve shall be installed on the main pump inlet. It shall be electrically actuated from the pump panel and include a manual override hand wheel on the pump panel. The valve shall include a pressure relief valve to guard against incoming pressure surges.

**INTAKE RELIEF**

A relief valve shall be installed on the intake side of the pump. The surplus water shall be discharged away from the pump operator and terminate with Male NST hose thread.

**2.5" LEFT SIDE INLET**

One 2.5" gated inlet valve shall be provided on the left side pump panel. The valve shall be supplied with chrome plate female swivel, plug, chain, and removable strainer. The valve shall attach directly to the suction side of the pump with the valve body behind the pump panel.

**VALVE**

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

## VALVE ACTUATOR

The valve shall be controlled by a rack and sector with a Class 1 push pull handle located at the operator's panel.

## 2.5" PRESSURE GAUGE

The discharge shall be equipped with 2.5" Class 1 gauge. The gauge shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to minus 40 degrees F. The case shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area. To prevent internal freezing, and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem. A bright metal bezel shall be supplied for resistance to corrosion and to protect the lens and case from damage. The gauge shall be mounted adjacent to the corresponding water outlet.

## DISCHARGE TERMINATION

The discharge valve shall be equipped with a 30° elbow termination that is capped and chained.

## THREAD TERMINATION

The above shall terminate with National Standard Threads.

## DISCHARGE ADAPTER

One (1) 2.5" NST female x 1.5" NST male chrome plated adapter with 1.5" NST chrome plated cap and chain shall be provided for the above discharge.

**DISCHARGE TERMINATION**

The discharge valve shall be equipped with a 30° elbow termination that is capped and chained.

**THREAD TERMINATION**

The above shall terminate with National Standard Threads.

**DISCHARGE ADAPTER**

One (1) Task Force Tips #AA3ST-NL 3" NST female x 5" Storz adapter with #A01ST 5" Storz cap and chain shall be provided for the above discharge.

**DISCHARGE #4 - RIGHT**

The discharge in position #4 on the right side of the apparatus shall include the following features.

A 2.5" discharge shall be provided on the right side of the apparatus.

**VALVE**

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

**VALVE ACTUATOR**

The valve shall be controlled by a Class 1 push/pull handle located at the operator's panel.

**2.5" PRESSURE GAUGE**

## VALVE ACTUATOR

The valve shall be controlled by a Class 1 push/pull handle located at the operator's panel.

## 2.5" PRESSURE GAUGE

The discharge shall be equipped with 2.5" Class 1 gauge. The gauge shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to minus 40 degrees F. The case shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area. To prevent internal freezing, and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem. A bright metal bezel shall be supplied for resistance to corrosion and to protect the lens and case from damage. The gauge shall be mounted adjacent to the corresponding water outlet.

## DISCHARGE TERMINATION

The discharge valve shall be equipped with a 30° elbow termination that is capped and chained.

## THREAD TERMINATION

The above shall terminate with National Standard Threads.

## DELUGE RISER

A 3" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be rigidly braced. The riser shall be gated and controlled from the pump operators panel.

## VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

## CROSSLAYS

Two (2) crosslay hose beds shall be supplied. The piping and valves shall be 2". The swivel shall be 1.5". The valves shall be push/pull controlled from the pump panel.

Each compartment shall hold a minimum of 200 ft. of 1.75" double jacket hose. Both beds shall be of the same dimension. The height to the bottom of the crosslay shall be no more than 74 inches from the ground.

## VALVE

The valve shall be an Akron Heavy-Duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10-year warranty covered by Akron Brass.

## VALVE ACTUATOR

The valve shall be controlled by a Class 1 push/pull handle located at the operator's panel.

## 2.5" PRESSURE GAUGE

The discharge shall be equipped with 2.5" Class 1 gauge. The gauge shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to minus 40 degrees F. The case shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area. To prevent internal freezing, and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem. A bright metal bezel shall be supplied for resistance to corrosion and to protect the lens and case from damage. The gauge shall be mounted adjacent to the corresponding water outlet.

## THREAD TERMINATION

The above shall terminate with National Standard Threads.

## CROSSLAY COVER

## THREAD TERMINATION

The above shall terminate with National Standard Threads.

## MASTER PUMP DRAIN

A multiport master drain valve shall be provided and plumbed to multiple locations on the main pump body. The valve assembly shall be clearly marked as the Master Drain.

## DRAIN VALVES LIFT UP STYLE

Vertical lift up style, quarter turn style drain valves shall be provided for each suction inlet, or discharge outlet as specified. Each drain shall be clearly marked and color coded to match the corresponding suction of discharge.

## PUMP AND GAUGE PANELS

The pump controls and gauges shall be located at the left side of the apparatus. The pump and gauge panels shall be flush mounted on the aluminum extruded pump module framework.
Pump panels on both sides shall be easily removable. The gauge and control panels shall be two separate panels for ease of maintenance. The upper gauge panel shall be hinged with a full-length stainless steel hinge held closed with a 1/4-turn latch. There shall be an access door located over the right side pump panel. This door shall have a stainless steel hinge and latching mechanisms.
The right side pump panel shall be vertically hinged to allow the panel to move away providing complete access to the pump compartment.
The control panel shall be laid out in a user-friendly manner. All valve controls shall have the corresponding discharge gauge located immediately adjacent to control handle to allow operator to view the discharge pressure without searching the panel.

## PANEL FINISH

The panels shall be constructed of black powder covered aluminum for maximum protection against abrasion caused during normal use.

## COLOR CODING

Each discharge valve control, outlet, and corresponding line gauge shall be color-coded.

## PUMP PANEL LIGHTS LED - OFFICER'S SIDE

The officer's side pump panel shall be illuminated by LED lights, controlled at the pump panel.

## PUMP PANEL GAUGES AND CONTROLS

The following shall be provided at the pump operator's panel:

Two (2) certified laboratory test gauge outlets.
Push/pull pump primer control.
Master drain control and additional drains as needed.
Tank fill and pump cooler valve controls.
Tank to pump valve control.
Pump capacity rating plate.
All discharge controls.
Two (2) master 4-1/2" pump gauges.
2-1/2" Gauges for all 1-1/2" and larger discharge lines.

## AUTOMATIC FIRE PUMP PRIMING SYSTEM

A Trident Model #31.011.1 automatic air operated priming system shall be installed. The unit shall be of all brass and stainless steel construction and designed for fire pumps of 1,250 GPM (4,690 LPM) or more. Due to corrosion exposure no aluminum or vanes shall be used in the primer design. The primer shall be three-barrel design with direct connection to the Hale fire pump. The primer shall automatically drain when the panel control actuator is not in operation. The connection to the pump shall have an integral Hale strainer.

Performance, Safety, and NFPA Compliance
The priming system shall be capable to a vertical lift to 22 inches of mercury and shall be fully compliant to applicable NFPA standards for vertical lift. The system shall create vacuum by using air from the chassis air brake system through a three-barrel multi-stage internal "venturi nozzles" within the primer body. The noise level during operation of the primer shall not exceed 75 Db.

Air Flow Requirements
The primer shall require a minimum of 15.6 cubic foot per minute air compressor and shall be capable of meeting drafting requirements at high idle engine speed. The air supply shall be from a chassis supplied 'protected' air storage tank with a pressure protection valve. The air supply line shall have a pressure protection valve set between 70 to 80 PSIG.

There shall be a Hale TRVL-120 Thermal Relief Valve (TRV) supplied. The valve shall automatically dump a controlled amount of water to atmosphere when the pump water exceeds 120 degrees Fahrenheit. The valve shall re-set automatically. A light shall be provided at the pump panel, which will illuminate when the pump reaches 120 degrees Fahrenheit to warn the operator that the pump is automatically dumping.

**AIR HORN BUTTON**

A push button switch shall be provided on pump operators panel to activate the air horns.

The button shall be labeled "EVACUATION".

**FUEL GAUGE**

A fuel gauge shall be located on the driver's side pump panel.

**4.5" MASTER GAUGES**

Two (2) 4-1/2" Class 1 master gauges shall be provided. Each gauge shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to minus 40-degrees Fahrenheit. The cases shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area. To prevent internal freezing, and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem. A bright metal bezel shall be supplied for resistance to corrosion and to protect the lens and case from damage. The gauges shall be mounted next to each other adjacent to crosslay area at the right upper section of the pump operator's panel. The intake gauge shall be to the left of the discharge gauge.

**WATER TANK GAUGE**

A Class1 ITL-40 Intelli-Tank water level gauge shall be provided. The gauge shall feature a 180-degree viewable display with all RED ultra-bright LED's for high visibility even in direct sunlight. Water level sensing shall be through a pressure transducer, and capable of indicating nine (9) accurate levels.

- Located on the driver's side pump panel.

**WATER TANK GAUGES**

**WATER TANK**

The water tank shall have a capacity of 3,000 U.S. gallons.

**3" DIRECT TANK FILL - BACK DRIVER'S SIDE**

A 3" direct tank fill shall be included at the rear of the apparatus. The valve shall be a Fireman's Friend check valve. A push-pull bleeder shall be provided. The valve shall be heavy gauge stainless steel. The valve shall be installed inside the water tank to eliminate any possibility of freezing.

**3" DIRECT TANK FILL - BACK OFFICER'S SIDE**

A 3" direct tank fill shall be included at the rear of the apparatus. The valve shall be a Fireman's Friend check valve. A push-pull bleeder shall be provided. The valve shall be heavy gauge stainless steel. The valve shall be installed inside the water tank to eliminate any possibility of freezing.

**DUMP VALVES**

Three (3) Newton 10" x 10" Kwik dump assemblies with electric control shall be provided, one at each side of the body and one at the rear. The dumps shall be constructed of stainless steel. The electric controls shall be mounted near the dump assembly and in the cab. The dump switches shall be illuminated.

A telescopic chute with electric control shall extend from each dump valve. The chutes shall be constructed of stainless steel.

**ADAPTERS**

Two (2) adapters, 3" F NST X 3" Storz shall be provided for the rear direct tank fill valves.

**BODY SUBFRAME**

A stainless steel subframe/undercarriage shall be provided for the body compartments.

**APPARATUS BODY**

The compartments shall be fabricated from 304 stainless steel and attached to the body sub frame. All compartment seams shall be sealed to prevent leakage. The compartments shall be a "Sweep-Out" style with

Each compartment shall come equipped with 1.625" x .875" x .125" aluminum Unistrut channel. The Unistrut shall be securely fastened to the interior walls of the compartment.

## COMPARTMENT DOORS

The compartment doors shall be box pan construction. The outer door skin shall be .190" 5052-H32 aluminum. The inner pan shall be .125" 5052-H32 aluminum securely welded to the outer skin. A hat section channel shall be installed in the center of the door to stabilize the door pan and to deaden the sound when closing the door. The doors shall have double latches. Access cover plates shall be provided to service latch mechanisms. The door edge shall be 7/16" thick providing ample strength for the attachment of the door hinge. The door hinge shall be polished stainless steel .075" thick with a 3/16" diameter pin and 1" long knuckles. The hinge shall be attached using 1/4" truss head stainless steel bolts spaced 5" apart. The door shall be of the double seal design incorporating an inner and outer "D" shaped extruded rubber automotive seal to provide a tight seal at each compartment.

Flush mounted chrome plated bent "D" ring door handles; single point positive type latches with adjustable catches (slam type door catches) shall be provided on all compartments. Gas strut cylinder arms shall be mounted on each swing out compartment door.

Compartments shall have full-length stainless steel hinges. The compartment to the right of the pump panel shall have a right hinged door, all other compartment doors shall be left hinged.

A door open indicator light shall be provided in the cab.

## DOOR SILL PROTECTION - BODY COMPARTMENTS

All body compartment sills shall have a Protec clear film applied to the bottom to protect from scratching when removing equipment.

## COMPARTMENT DOOR INTERIOR FINISH

The interior surface of the hinged compartment doors shall be completed with a DA finish providing a unique pattern for scratch resistance.

## COMPARTMENT LIGHTING

* NOTE: Individual tool mounts are not included.

**HOSE BED**

The main hose bed shall be located above the booster tank and shall be an integral part of the tank.

**HOSE LOAD**

The main hose bed shall accommiate the folloing:

- 500 feet of 3-inch hose.

- 1000 feet of 5-inch LDH.

Make and model of hose to be provided by the fire department at the pre-construciton conference.

**HOSE BED COVER**

There shall be a nylon/vinyl hose bed cover for the main hose bed. The cover shall be capable of being securely fastened at the front, sides and rear.

The color of the hose bed cover shall be black.

**COVER FASTENERS**

The hose bed cover shall be secured with black bungie cords with red pull tabs.

**HOSE BED DIVIDER**

The hose bed shall be divided by a 3/16" aluminum partition that is fully adjustable by sliding in tracks located at the front and rear of the hose bed. The divider shall be located as needed. A hand hold cut out is included at the end of the divider.

**SIDE HOSEBED LIGHTING**

The rear of the body shall be equipped with up to eight (8) fixed Innovative Control fold-down steps with integrated step lights mounted on each side of the front face of body to provide access to the rear hosebed area.

The quantity and location of steps and handrails shall meet the Current NFPA 1901 pamphlet in effect at the time the apparatus is ordered.

The color of the LED light shall be determined at the pre-construciton conference.

**INTERMEDIATE REAR STEP**

There shall be one (1) full width treadplate rear step, 8" deep, provided at the rear of the apparatus below the hose bed.

**RUB RAILS**

The body shall be equipped with anodized aluminum channel style rub rails at the sides. Rub rails shall be spaced away from the body by 1/2" polymer spacers. The rub rails shall be polished to a bright finish.

**ALUMINUM TREADPLATE**

All load bearing aluminum treadplate running boards shall be .155 thick bright-annealed finish. Running boards and rear step edges shall be flanged down for added strength. Running boards shall also be flanged up to form kick plates. All non-load bearing aluminum shall be .125" thick bright annealed finish. In areas where aluminum treadplate shall function as a load-bearing surface, there shall be a heavy steel sub-structure. This structure shall consist of 3" channel and 1-1/2" angle welded support. This shall assure that there shall be no flexing or cracking of running boards. The aluminum shall be insulated from the steel by closed cell foam body barrier material.

Treadplate locations:
1. Skirting around front bumper.
2. The step at the cab entrance.
3. The jump seat steps.
4. The body header.
5. The running boards.
6. The rear step.
7. The top of the compartments.

## FENDER PANELS

The rear side fenders shall be stainless steel panels. The wheel liners shall be constructed of pre-formed composite material to provide a maintenance free, damage resistant surface.

## GROUND LADDERS

The apparatus shall be equipped with heavy duty, box type "I" beam rail, ground ladders. The ladders shall meet the requirements of NFPA 1931 to ensure proper design and that sufficient strength is available for the service intended. The ground ladders shall be constructed of aluminum with non-welded, field replaceable rung to rail connections to simplify field repairs and removable plated steel butt spurs for added strength. A full 1/2", non-rotting, poly rope shall be provided for easy ladder operation.

One (1) Alco-Lite PEL-35 35 ft. three-section aluminum extension ladder.
One (1) Alco-Lite PRL-16 16 ft. aluminum roof ladder.

The ladders shall have lifetime Warranty against manufacturing defects.

## ZIAMATIC QUIC-LIFT LADDER RACK

The ground ladders shall be mounted on a Ziamatic electric ladder rack system so that they may be automatically lowered to a convenient height for safe and easy removal. The rack shall be made of high strength lightweight cast aluminum and be powered by two high cycle electric actuators and shall be self-locking in any position. The rack shall be capable of lowering the ladders approximately 28.25" from their stored position.

## LADDER RACK ALARM

A LEO LA20 ladder rack alarm shall be audible and visual when the ladder rack deployed from its stowed position.

## LADDER RACK EXTENSION

The ladder rack will include the optional lower extension feature to lower the ladders closer to the ground to avoid back injuries from reaching.

All circuits conform to SAE1292. All circuits are provided with low voltage over current protective devices. These devices are readily accessible and protected against heat in excess of component rating, mechanical damage, and water spray. Star washers are not used for ground connections.

ICC lights shall be provided to meet D.O.T. requirements.

**BACK-UP ALARM**

An Ecco model SA917 automatic self-adjusting electronic back-up alarm producing 87-112 db shall be installed at the rear between the frame rails. It shall operate whenever the transmission's reverse gear is selected.

**STOP/TAIL/TURN/REVERSE LIGHTS**

The rear stop/tail/turn/reverse lights shall be Whelen M6 series lights installed in quad housings one (1) each side on the rear of the apparatus body. The stop/tail lights shall be LED model M6BTT located in the top position of the housing. The amber arrow turn signals shall be LED model M6T located below the stop/tail lights. The reverse lights shall be LED model M6BUW located below the turn signals. The bottom position of the housing shall accommodate a Whelen M6 series warning light.

**LED ICC/MARKER LIGHTS**

LED type ICC/marker lights shall be provided to meet D.O.T. requirements.

**STEP LIGHTS**

The pump module running board area shall be illuminated by Whelen 2G 4" diameter LED lights mounted one each side on the front of the body in chrome flanges.

LED strip lighting or individually mounted lights shall be provided at the rear of the body to illuminate all stepping surfaces.

**GROUND LIGHTING**

The apparatus shall be equipped with lighting capable of illumination to meet NFPA requirements. Lighting shall be provided at areas under the driver and crew riding area exits and shall be automatically activated when the exit doors are opened. The ground lights shall be TecNiq T44 LED. Lighting required in other areas

Zone B (officer's side) shall have two (2) Whelen M4VR2 lights and one (1) M6RC LED warning light.

The lights shall be installed one (1) near the front corner of the apparatus, one (1) near the rear axle, and one (1) near the rear corner of the apparatus.

Zone C (rear) shall have two (2) Whelen M6 Series model M6* Super LED warning lights installed one (1) each side on the lower rear of the apparatus.

Zone D (driver's side) shall have two (2) Whelen M4VR2 lights and one (1) M6RC LED warning light.

The lights shall be installed one (1) near the front corner of the apparatus, one (1) near the rear axle, and one (1) near the rear corner of the apparatus.

**LED WARNING LIGHT FLASHER**

Three (3) Whelen model UFM8 warning light flashers shall be provided to control warning lights. One (1) flasher shall be located in the cab and two (2) located in the body. Each flasher shall have seventeen (17) selectable patterns with eight (8) outputs

**ADDITIONAL WARNING LIGHTS**

There shall be four (4) additional Whelen M9 series model M9* LED warning lights installed on the apparatus.

- Two (2) on the driver's side of the body, one (1) in each upper body corner.

- Two (2) on the officer's side of the body, one (1) in each upper body corner.

**TRAFFIC ADVISOR**

One (1) Whelen TAM65 LED traffic advisor shall be installed at the rear of the apparatus. The advisor shall have eight (8) amber LED light heads. The TACTL5 control head shall be mounted in a location specified by the fire department.

**LED SCENE LIGHT - FRONT OF CAB**

primer Devran 201 shall be applied. Once the assembly of the frame is complete and the second primer is applied the entire assembly shall be covered with high quality top coat paint preferably Imron 5000 or equal.

Electro Plating

Steel and Iron brackets such as the pump module bracket shall be Zinc or cadmium plated to protect against corrosion. Plating shall be in accordance with ASTM B663.

Fasteners

In any area that a stainless steel screw or bolt head is to come in contact with aluminum or steel, painted or non-painted, the fastener shall have the underside of the head pre-coated with nylon. The nylon coating shall act as a barrier between the fastener head and the metal or painted surface.

Screw or bolt taped into the metal shall be pre-coated with a Threadlocker type material pre-applied on the threads.

When bolting together stainless steel the pan-head bolts with nylon coating under the head, a stainless washer with a rubber backing, and a Stover flange nut to secure the bolt, shall be utilized.

When mounting aluminum components such as a step to the apparatus body, stainless steel washers with rubber backing shall be used. All mounted components shall utilize barrier material between the two surfaces.

All rivet or huck type fasteners shall be of the same material being secured.

Whenever possible, holes shall be pre-drilled and taped when mounting components such as lights, steps, and hand rails prior to the paint process to reduce the corrosion opportunity. If a hole must be drilled into a previously painted surface, the paint barrier around the hole shall be re-established and a flange-type nutsert with a gasket under the flange shall be used.

When possible, the use of stainless trim screws shall be minimized. Structural tape and or adhesive shall be used where possible for mounting trim to the body or cab.

If a pre-treated screw or bolt is not available, hand applied Dynatex Boltlocker or Theadlocker shall be placed on the threads of the screw, bolt or nutsert. This will help seal threads from moisture and help prevent the fasteners from loosening. If lubricant is used when tapping the hole, the hole will be cleaned of lubricant and the shavings before applying.

Barrier Tape

Barrier tape shall be used on the backsides of all lights, trim pieces, or other components when bolting them to the apparatus; also when attaching stainless steel over an aluminum surface or when attaching aluminum

All fasteners and coatings have been chosen after extensive salt spray testing. Salt spray tests are used to confirm the relative resistance to corrosion of coated and uncoated metallic specimens, when exposed to a salt spray climate at an elevated temperature. Test specimens are placed in an enclosed chamber and exposed to a continuous indirect spray of neutral (pH 6.5 to 7.2) salt water solution, which falls-out on to the specimens at a rate of 1.0 to 2.0 ml/80cm$^2$/hour, in a chamber temperature of +35C., steady state condition.

Method

Salt fog testing is performed by placing samples in a test cabinet that has been designed in accordance with Paragraph 4 (Apparatus) of ASTM B117 and operated in accordance with Paragraph 10 (Conditions) of ASTM B117.

A 5% salt solution, prepared by dissolving sodium chloride into water that meets the requirements of ASTM D1193 Specification for Reagent Water, Type IV is supplied to the chamber. At the time the samples are placed into test, the cabinet is pre-conditioned to the operating temperature of 35ºC and fogging a 5% salt solution at the specified rate.

Orientation

The samples are placed at a 15-30 degree angle from vertical or tested in the "installed" position. This orientation allows the condensation to run down the specimens and minimizes condensation pooling. An important aspect of the test is the utilization of a free-falling mist, which uniformly settles on the test samples. This simulates a "real world" condition.

Test durations

Test durations are 500 hours, and the test cabinet will remain closed for the duration of the test.

**PAINTING**

All exposed metal surfaces not chrome plated, polished stainless steel or bright aluminum tread plate shall be thoroughly cleaned and prepared for painting. All irregularities in painted surfaces shall be rubbed down and all seams shall be caulked before the application of the finish coat.

All removable items such as brackets shall be removed and painted separately to insure finish paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly. Both aluminum and steel surfaces to be painted shall be primed with a two (2)-component primer which is compatible with the finish coat. The apparatus shall be finish painted with a polyurethane base/clear system. "No Exception"

Utilizing the stainless steel body fabrication, the interior of all compartments, inside hose bed, and surrounding areas adjacent to compartments doors shall remain a #4 brushed stainless steel finish. This practice shall eliminate the possibility of paint chipping, and electrolysis of aluminum which can cause corrosive action between dissimilar metals. Chassis and compartment doors shall be painted the color indicated.

Sixty (60) 3" 22KT Gold laminate goldleaf letters, with left hand shading and right hand outline to equal 3-5/8" letter, shall be provided.

**GRAPHICS PACKAGE**

A basic graphics package is included. Details shall be dicussed at the pre-construction conference. The fire department will provide detailed photos of existing apparatus to match color, font and size of graphics.

A detailed approval drawing for the graphics shall be provided for approval before finalizing.

**STRIPING**

A 6" Scotchlite stripe shall be provided across the front of the cab and along each side of the apparatus. The color shall be black.

**"Z" STRIPE**

The Scotchlite stripe shall be a one-piece "Z" type on the cab sides and continuing straight along each side of the apparatus.

Two (2) additional 1" Scotchlite stripe shall be provided.

**CHEVRON STRIPING, REAR BODY, ORAFOL REFLEXITE**

The apparatus shall have 6" red and black reflective Orafol Reflexite Chevron style striping affixed to the entire back of the body. The striping will be set in a manner to have the effect of an inverted "V" shape. The stripe will travel low to high from the outside to the inside.

**COLOR OF CHEVRONS**

The rear body chevrons shall be red / black in color.

**MISCELLANEOUS EQUIPMENT FURNISHED**

The OEM warranties shall be applied for all major components.

## MANUFACTURING & LOCATIONS

The apparatus will be manufactured in facilities wholly owned and operated by the company. A complete stock of service parts, and service shall be provided on a 24 hours around the clock basis. The company shall maintain parts and service for a minimum period of twenty (20) years on each apparatus model manufactured.

## DEALER PREP/INSPECTION

The apparatus dealer responsible for the sale of the Sutphen apparatus shall perform a pre-delivery inspection of the apparatus prior to the customer taking possession of the vehicle. This inspection allows for the dealer to record all applicable part and serial numbers for the apparatus so that service and parts can be easily facilitated during the service life of the vehicle. This inspection also allows for a second quality control check, prior to the apparatus being placed in service.

6

# Warranty Statement

**Effective May 30, 2020**

Subject to the following general and specific terms and conditions, Hale Products, Inc. ("Seller") hereby warrants to the original Purchaser1 that Products sold under Hale and Class 1 brands will be free of defects in material and workmanship for the applicable Warranty Period. General terms and conditions applicable for all Products are set forth under the heading **General Terms and Conditions** below. Product specific terms and conditions, including Warranty Periods and Warranty Coverages, are set forth in the Tables following the **General Terms and Conditions.**

**General Terms and Conditions**

The following limitations, exclusions, procedures, and other terms and conditions shall apply for all Products: Warranty is voided if:

- Product is used for an application, with products or in a manner other than the application, products, and manner for which such Product is designed and intended
- Product is subjected to a use, service, condition or environment other than a use, service, condition or environment for which such Product is designed and intended
- Product is not properly installed
- Product is not properly tested and maintained in accordance with Seller's product manuals and supplemental instructions and guidelines, applicable industry standards and guidelines, and applicable legal and regulatory requirements
- Product is altered, modified, serviced (except routine maintenance performed in accordance with Seller's instruction manual for Product and Industry accepted standards and guidelines), or repaired by a person other than Seller or a person authorized by Seller to make such alteration or modification or perform such service or repair
- Seller is not paid the full amount of the purchase price for Product when due.

No Warranty covers:

- Ordinary wear and tear
- Failure due to compliance with a specification or design provided or required by Purchaser
- Failure due to improper operation, excess pressure, excess voltage or other similar cause
- Failure due to operator error
- Damage during or after shipment and failure attributable thereto or resulting there from
- Failure attributable to or resulting from the failure or substandard, inadequate or improper performance of any part, component or equipment not supplied by Seller
- Failure attributable to or resulting from the failure or substandard, inadequate or improper performance of any third party (e.g., not Hale or Class 1 brand) part, component, Product or equipment, whether or not combined, packaged, incorporated, installed or used with a Hale or Class 1 brand part, component, Product or equipment.

Seller shall have no obligation under any Warranty unless Purchaser promptly notifies Seller of the failure giving rise to the Warranty claim, such notice is received by Seller within the applicable Warranty Period, and Seller is provided with such information, data and records (including, but not limited to, in service date, run hours, and service and repair records) as Seller may reasonably request in evaluating the Warranty claim. The notice of failure must be given in writing, identify the Product claimed to be defective (including serial number, if any), and describe in reasonable detail the circumstances surrounding the failure.

Repaired Product and replacement Product shall be warranted only for the remainder of the original Warranty Period.

*[1] The "original Purchaser" is the original purchaser from Hale Products, whether the original purchaser is a distributor, dealer or other reseller, an OEM, or an end user.*

**Hale Products**
607 NW 27th Avenue
Ocala, FL 34475
haleproducts.com

IDEX FIRE & SAFETY

# Warranty Statement

Effective May 30, 2020

SELLER'S WARRANTY AS SET FORTH HEREIN IS SELLER'S SOLE AND EXCLUSIVE WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGMENT ALL OF WHICH OTHER WARRANTIES ARE EXPRESSLY EXCLUDED.

THE RIGHTS AND REMEDIES SET FORTH HEREIN ARE THE SOLE AND EXCLUSIVE RIGHTS AND REMEDIES AGAINST SELLER. EXCEPT FOR THE SPECIFIC LIABILITIES AND OBLIGATIONS PROVIDED HEREIN, SELLER SHALL HAVE NO LIABILITY OR OBLIGATION WITH RESPECT TO ANY PRODUCT CLAIMED TO BE DEFECTIVE IN ANY MANNER.

UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, LOST OR UNREALIZED SALES, REVENUES, PROFITS, INCOME, COST SAVINGS OR BUSINESS, LOST OR UNREALIZED CONTRACTS, LOSS OF GOODWILL, DAMAGE TO REPUTATION, LOSS OF PROPERTY, LOSS OF INFORMATION OR DATA, LOSS OF PRODUCTION, DOWNTIME, OR INCREASED COSTS, IN CONNECTION WITH ANY PRODUCT, EVEN IF SELLER IS ADVISED OR PLACED ON NOTICE OF THE POSSIBILITY OF SUCH DAMAGES AND NOTWITHSTANDING THE FAILURE OF ANY ESSENTIAL PURPOSE OF ANY PRODUCT.

**Hale Products**
607 NW 27th Avenue
Ocala, FL 34475
haleproducts.com

IDEX FIRE & SAFETY

# Warranty Statement

**Effective May 30, 2020**

## Hale Products, Inc.

## Product Specific Warranty Terms and Conditions

| Product* | | Warranty Period | Coverage** |
|---|---|---|---|
| Pump Modules | Pump Body Weldments, Stainless Manifolds, and Fabricated non-painted or powder coated panels | 10 years from the date of shipment of Product to original Purchaser. | Repair or replacement of Product that Seller determines failed (including cracks resulting from stress and rust through of panels) during Warranty Period due to a defect in material or workmanship. No labor is included. |
| | | | Pump modules are built to original Purchaser's specification or design. Although individual Hale and Class 1 brand components used for pump modules comply with NFPA standards, pump modules are not NFPA compliant. Original Purchaser is solely responsible for (i) ensuring finished pump houses are NFPA complaint and adhere to industry accepted standards and guidelines, and (ii) supplying manuals that include appropriate directions, instructions and warnings concerning pump house operation. |
| | Fabricated painted or powdered coated panels | 2 years from the date of shipment of Product to original Purchaser | Repair or replacement of Product that Seller determines failed from paint, finish, and corrosion during Warranty Period due to a defect in material or workmanship. No labor is included. |
| Foam SmartFoam, SmartCAFS, CAFS Systems, SmartATP, and EZ Fill | | 3 years from the date of shipment to original Purchaser. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. Datalogger download from Product may be requested to determine cause of defect. |
| Foam FoamLogix Systems | | 1 year from the date of shipment to original Purchaser. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |
| Pump Repair & Replacement Parts | Ordered for service and repair | 90 days from date of shipment of Product to original Purchaser. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |
| Pressure Gauges | | 3 years from date of shipment of Product to the original Purchaser. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |
| Plumbing | | 2 years from date of shipment of Product to original Purchaser. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |
| Valves | Akron Valve | 10 years from date of shipment of Product to original Purchaser on everything except seal. No warranty on seal. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |
| | Class 1 Valve | 10 years from date of shipment of Product to original Purchaser on everything except seal. No warranty on seal. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |
| | Hale Valve | 10 years from date of shipment of Product to original Purchaser on everything except seal. No warranty on seal. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |
| | SVS Torrent Valve | 10 years from date of shipment of Product to original Purchaser on everything except seal. 2 years from date of shipment of Product to original Purchaser on seal. | Repair or replacement of Product that Hale determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |

**Hale Products**
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Ocala, FL 34475
haleproducts.com

IDEX FIRE & SAFETY

# Warranty Statement

Effective May 30, 2020

## Hale Products, Inc.

## Product Specific Warranty Terms and Conditions

| Product* | | Warranty Period | Coverage** |
|---|---|---|---|
| SAM Bundles-Pump with Loose Valves, Kits or Modules | Pumps-Mid-Ship, Rear Mount, and Booster (Excludes all Engine Driven Units) Non-Marine Fire Service Applications | Earlier of (i) 10 years from in service date of vehicle or equipment in which Product is initially installed, or (ii) 10-1/2 years from date of shipment of Product to original Purchaser. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. |
| | | | Under SAM Warranty, Seller will cover parts and labor for earlier of (i) 10 years from in service date of vehicle or equipment in which Product is initially installed, or (ii) 10-1/2 years from date of shipment of Product to original Purchaser.<br>When labor is covered, original Purchaser will be reimbursed at Seller's then current standard labor hours and service rates for labor to make repair (if not repaired by Seller) and to remove defective Product and re-install repaired or replacement Product. Seller's approval of repair estimate is required prior to performance of repair work. If applicable, actual mileage will be reimbursed at Seller's then current mileage reimbursement rate. See the Hale Labor Warranty Guides for details on issues covered and fee paid. |
| | Akron Electric Valve Actuators and Navigator Pros | 5 years from date of shipment of Product to original Purchaser. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |
| | Electronics | 4 years from date of shipment of Product to original Purchaser. | Repair or replacement of Product that Seller determines failed during Warranty Period due to a defect in material or workmanship. No labor is included. |

*When Products are combined to form a module or package, each Product will have its own separate Warranty Period and Warranty Coverage

** For each Product, Seller will have the option to refund to Purchaser (in cash or by credit) the purchase price Seller was paid for such Product, less depreciation determined on a straight line basis over the Warranty Period, in lieu of repair or replacement (including, when applicable, labor). The decision whether to repair, replace or refund (and, if there is a refund, whether to refund in cash or by credit) shall be made by Seller in its sole discretion.

*** Seller makes no warranty with respect to engines. Any warranty with respect to engines is limited to whatever warranty may be provided by the engine manufacturer.

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IDEX FIRE & SAFETY

SUTPHEN

# STANDARD VEHICLE WARRANTY

SUTPHEN CORPORATION (Sutphen) warrants to the original purchaser of a Sutphen vehicle, that it will provide for repairs to the Sutphen vehicle during the warranty period, in accordance with the following items, conditions, limitations and exclusions.

1. ---**What is covered except as otherwise stated below:** Sutphen shall provide repair or replacement, at the sole option of Sutphen, of any part of a Sutphen vehicle in which a defect in materials or workmanship appears under normal use, maintenance or service.

2. ---**Warranty period:** This limited warranty is in effect for a period of twelve (12) months or 24,000 miles, whichever comes first. The warranty period will begin on the date the vehicle is delivered to the original purchaser. This limited warranty is void if the odometer has been disconnected, its reading has been altered, or true and accurate mileage cannot be otherwise determined by Sutphen.

3. ---**Other warranties:** The manufacturers of other equipment and components, installed on the vehicle, including but not limited to engine, transmission, axles, pumps, tanks, and signaling devices and other installed equipment, may provide their own warranties. These warranties are separate from this limited warranty and shall constitute the sole and exclusive warranty for those specific covered components. Sutphen shall have no duty or obligation to repair or replace such components. Please review each manufacturer's warranty for descriptions and details of their respective warranty.

4. ---**Purchaser responsibilities:** Normal maintenance such as those detailed in the Sutphen Operation and Maintenance Manuals are the responsibility of the purchaser. A copy of maintenance documentation may be requested before approval is given for warranty repair. Failure to comply with such maintenance voids this limited warranty.

5. ---**What is NOT covered:** This limited warranty covers only repair or replacement of any part of a Sutphen vehicle in which a defect in materials or workmanship appears within the limited warranty period.
   Examples of items not covered include, but are not limited to:
   A. Major components or trade accessories such as purchased chassis, engines, signaling devices, transmission, pump, tank, or generator that have a separate warranty by the original manufacturer, or equipment used in fire fighting.
   B. Unauthorized alteration or modification to the vehicle, including the body, chassis or components, after completion of the vehicle assembly by Sutphen and any problems that occur as a result of such alterations or modifications.
   C. Damage caused by collision, fire, theft, freezing, vandalism, riot, explosion, acts of God, war or objects striking the vehicle or any damage covered by owner insurance.
   D. Damage caused by misuse or improper operation of the vehicle such as driving over curbs, overloading, racing or off-road use.
   E. Damage caused by failure to follow the requirements of the maintenance schedule, failure to maintain proper fluid and lubricant levels and failure to follow operating instructions.
   F. Normal maintenance such as lubrication, filter replacement, fluid replacement, belts, hoses, clutch, brake linings, brake drums, or disc brake rotors and electric accessories, etc.
   G. Batteries, tires, light bulbs.
   H. Towing charges and storage expenses.
   I. Incidental expenses such as loss of vehicle use, inconvenience, loss of time, vehicle rental, lodging or travel costs, vacation pay, etc.
   J. Discharge and compound gauges from freezing.
   K. Leaking seals on discharge and suction valves.
   L. Damage caused from exposure to road de-icing compounds or use in an acidic environment.
   M. Hydraulic failures caused by incorrect or contaminated oil.
   N. This warranty terminates upon transfer of ownership of the vehicle from the original purchaser.
   O. Damage caused from not following cab and body washing and care procedures located on truck and in operation and maintenance manual.

6. ---**Obtaining repairs:**
   A. All limited warranty work must be authorized by Sutphen prior to repairs being attempted.
   B. To obtain limited warranty repairs the vehicle must be taken by customer to an Authorized Sutphen Service Center within the limited warranty period. To find the name and location of the nearest Authorized Sutphen Service Center in your area, call 1-866-287-5549 or write Sutphen Corporation / Warranty Admin, PO Box 1845, Springfield, OH 45501.
   C. Sutphen reserves the right to inspect the vehicle before repairs are made and Sutphen shall be deemed the sole judge as to whether there is a defect in materials or workmanship under normal use, maintenance or service.

*continued*

SUTPHEN

# APPARATUS BODY STRUCTURAL INTEGRITY WARRANTY TEN (10) YEARS

SUTPHEN CORPORATION (Sutphen) warrants each new body and heavy duty rescue body manufactured by Sutphen to be free of structural failures caused by defective design or workmanship for a warranty period of ten (10) years after the date on which the vehicle is first delivered to the original purchaser or 100,000 miles, whichever occurs first. This warranty is limited to body tubular support and mounting structures and other structural components.

Sutphen's obligation under this warranty is limited to repairing or replacing, as Sutphen may elect, without charge to the original purchaser, the structural component or components which Sutphen, after examination, finds, to Sutphen's satisfaction, to have structurally failed due to defective design or workmanship.

Sutphen's obligation under this limited warranty is subject to the conditions precedent (1) that the claimed failure shall have first appeared during the warranty period; (2) that the original purchaser shall have notified Sutphen in writing of the claimed failure within thirty (30) days after the claimed failure shall have first appeared, and (3) that, unless Sutphen directs otherwise, the claimed failed item or items shall have been returned to Sutphen, or to Sutphen designee, promptly after the notification, with transportation charges prepaid. Sutphen reserves the right to thoroughly examine the vehicle or parts thereof, prior to conducting or approving any repair or replacement, to determine whether the claimed failure is covered by this warranty. Sutphen's obligation under this warranty is strictly limited to repair or replacement as the company may elect. The warranty is pro-rated for a period of ten (10) years from the date of delivery, as follows: first five years, one hundred percent (5-100%); sixth year, seventy-five percent (6-75%); seventh and eight years, fifty percent (7/8-50%); ninth and tenth years, twenty five percent (9/10-25%).

In advance of the original purchaser effecting repair or replacement of a structural component or components found by Sutphen to have structurally failed due to defective design or workmanship, approval for the repair or replacement must be obtained from Sutphen's Customer Service Department. Repair or replacement must be made by a facility approved in advance by Sutphen. Failure to obtain either or both of the advance approvals voids this warranty. Coverage under this warranty of labor for repair or replacement is limited to the time or amounts reasonably necessary, as determined by Sutphen, to make the repair or replacement. Labor time or amounts deemed excessive by Sutphen are not covered under this warranty.

Any repair or replacement effected by Sutphen under this limited warranty is itself warranted under this warranty for the duration of the warranty period subject, however, to the provisions of this warranty as are applicable to the structural component or components or replaced by Sutphen. Further, this warranty shall be void if the vehicle is involved in an accident, shows signs of abuse, or evidence of being operated in an improper manner.

This limited warranty covers only repair or replacement of any part of a Sutphen vehicle in which a defect in materials or workmanship appears within the limited warranty period. Examples of items not covered include, but are not limited to:

A. ---Major components or trade accessories that have a separate warranty by the original manufacturer, or to equipment used in fire fighting.
B. ---Unauthorized alteration or modification to the vehicle, including the body, chassis or components, after completion of the vehicle assembly by Sutphen and any problems that occur as a result of such alterations or modifications.
C. ---Damage caused by collision, fire, theft, freezing, vandalism, riot, explosion, acts of God, war or objects striking the vehicle or any damage covered by owner insurance.
D. ---Damage caused by misuse or improper operation of the vehicle such as driving over curbs, overloading, racing or off-road use.
E. ---Damage caused by failure to follow the requirements of the maintenance schedule, failure to maintain proper fluid and lubricant levels and failure to follow operating instructions.
F. ---Towing charges and storage expenses.
G. ---Incidental expenses such as loss of vehicle use, inconvenience, loss of time, vehicle rental, lodging or travel costs, vacation pay, etc.
H. ---Damage caused from exposure to road de-icing compounds or use in an acidic environment.
I. ----(1) Normal maintenance services or adjustments;(2) any item that has been repaired, replaced or altered by a facility not approved in advance by Sutphen Customer Service Department or in a manner which in Sutphen's judgment, may adversely affect the operation or longevity of the vehicle or item; (3) special, incidental or consequential damages including, but not limited to, loss of time, inconvenience, loss of use, or lost profits; (4) any malfunction resulting from misuse, negligence, alternation accident, or lack of operational knowledge or normal maintenance or adjustments; (5) time required to unload or reload the vehicle or item; (6) nonstructural breakage or cracking; (7) material bending, buckling or other metal deformation unless caused by a structural failure of a structural component as identified in Sutphen's specifications, of the body due to defective design or workmanship; or (8) transportation fees or charges to or from any facility.

*continued*

SUTPHEN

# PAINT WARRANTY
# TEN (10) YEARS

SUTPHEN CORPORATION (Sutphen) warrants vehicle exterior paint finish of fire apparatus against peeling, cracking, and lack of adhesion, provided the vehicle is used in a normal and reasonable manner. This limited warranty is extended only to the original user/purchaser.

Sutphen's obligation under this warranty is strictly limited to repairing or replacing as the company may elect. The company reserves the right to require any such repairs to be made either at a company owned service facility or another approved service facility at the company's option. Transportation cost to and from the servicing location is the responsibility of the user/purchaser. Further, this warranty shall be void if the vehicle is involved in an accident, shows signs of abuse, or evidence of being operated in an improper manner.

Periodically check apparatus for chips and scratches in the paint and repair them with touch-up paint furnished upon delivery, or equal paint. Several times a year wash underneath the apparatus, especially during winter months. If power wash is used, use a fan spray only or it may damage the undercoating or paint. If damage of undercoating or paint occurs, prime, paint, and re-undercoat areas where bare metal is showing.

Sutphen's obligation under this limited warranty is subject to these conditions:

(1) The claimed failure shall have first appeared during the warranty period;
(2) The original purchaser shall have notified Sutphen in writing of the claimed failure within thirty (30) days after the claimed failure shall have first appeared, and
(3) Unless Sutphen directs otherwise, the claimed failed item or items shall have been returned to Sutphen, or to Sutphen designee, promptly after the notification, with transportation charges prepaid.

Sutphen reserves the right to thoroughly examine the vehicle or parts thereof, prior to conducting or approving any repair or replacement, to determine whether the claimed failure is covered by this limited warranty. Sutphen's obligation under this warranty is strictly limited to repair or replacement as the company may elect.

The warranty is valid for a period of ten (10) years from the date of delivery as follows: first through seventh year, one hundred percent; eighth, nineth and tenth year, paint only. Paint only coverage from the paint manufacturer covers top coat and appearance only (gloss and color retention).

This limited warranty covers only repair or replacement of any part of a Sutphen vehicle in which a defect in materials or workmanship appears within the limited warranty period. Examples of items not covered include, but are not limited to:

A. ---Major components or trade accessories that have a separate warranty by the original manufacturer, or to equipment used in fire fighting.
B. ---An unauthorized alteration or modification to the vehicle, including the body, chassis or components, after completion of the vehicle assembly by Sutphen and any problems that occur as a result of such alterations or modifications.
C. ---Damage caused by collision, fire, theft, freezing, vandalism, riot, explosion, acts of God, war or objects striking the vehicle or any damage covered by owner insurance.
D. ---Damage caused by misuse or improper operation of the vehicle such as driving over curbs, overloading, racing or off-road use.
E. ---Damage caused by failure to follow the requirements of the maintenance schedule, failure to maintain proper fluid and lubricant levels and failure to follow operating instructions.
F. ---Incidental expenses such as loss of vehicle use, inconvenience, loss of time, vehicle rental, loading or travel costs, vacation pay, etc.
G. ---Gold leaf or striping and Scotchlite emblems or decals, except that which is affected by repair.
H. ---Damage caused from exposure to road de-icing compounds or use in an acidic environment.
I. ----Damage caused from not following cab and body washing procedures on truck and in Operation and Maintenance manual.
J. ----Defects if vehicle is damaged, dented, scratched or rusted from severe salt or road corrosive materials, or faded or discolored by exposure to heat or severe sun conditions or environmental conditions.
K. ---This warranty shall not apply to non-exterior surface areas (i.e. compartment interiors, undercarriages).
L. ---This warranty shall only apply to exterior coatings applied by Sutphen Corporation and specifically excludes all coating applications applied by other manufacturers including chassis and chassis compartments.

*continued*

SUTPHEN

# PLUMBING WARRANTY
# TEN (10) YEARS

SUTPHEN CORPORATION (Sutphen) warrants the stainless steel pipe and ancillary brass fittings used in the construction of the water plumbing system, for a period of ten (10) years, provided the vehicle is used in a normal and reasonable manner. This limited warranty is extended only to the original user/purchaser.

Sutphen's obligation under this warranty is strictly limited to repairing or replacing as the company may elect. The company reserves the right to require any such repairs to be made either at a company owned service facility or another approved service facility at the company's option. Transportation cost to and from the servicing location is the responsibility of the user/purchaser. Further, this warranty shall be void if the vehicle is involved in an accident, shows signs of abuse, or evidence of being operated in an improper manner.

This limited warranty covers only repair or replacement of above mentioned item(s) in which a defect in materials or workmanship appears within the limited warranty period.

This warranty terminates upon transfer of possession or ownership of the vehicle from the original purchaser.

THIS WARRANTY IS PROVIDED IN EXCLUSION OF ANY AND ALL OTHER REPRESENTATIONS, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS, AND SUITABILITY FOR BUYER'S INTENDED USE. NO PERSON IS AUTHORIZED TO MAKE ANY REPRESENTATIONS OR WARRANTIES ON BEHALF OF SUTPHEN CORPORATION OTHER THAN SET FORTH HEREIN. ANY MODIFICATION TO THIS WARRANTY MUST BE IN WRITING AND APPROVED BY THE PRESIDENT OF SUTPHEN CORPORATION. THE PROVISIONS OF THIS LIMITED WARRANTY SHALL CONSTITUTE THE SOLE AND EXCLUSIVE REMEDIES OF A SUTPHEN VEHICLE PURCHASER.

For more information contact:
Sutphen Corporation / Warranty Admin.
PO Box 1845 • Springfield, OH 45501
Phone (937) 969-8851 • Toll Free (866) 287-5549

# WHELEN USER DIRECT LIMITED LIFETIME WARRANTY FOR CERTAIN WHELEN PRODUCTS IN THE FIRE/EMS MARKETS

Whelen Engineering Company, Inc. ("Whelen") warrants the following products manufactured on or after January 1, 2021 (as stamped on the products) to be free from defects in material and workmanship for the duration that the following vehicles on which the products are initially installed are in-service at their original owner (a limited lifetime warranty); provided the products have been installed and operated in accordance with Whelen's manufacturer recommendations. This limited lifetime warranty is between the first purchaser (ultimate user) only and Whelen.

During the limited lifetime warranty period, the Factory Repair Center or an Authorized Whelen Repair Center will repair or replace (at its option and cost) any parts or electronic assemblies of the covered product that disclose a defect in material or workmanship. For warranty consideration, the user shall obtain a prior return merchandize authorization (RMA) by contacting Whelen's Technical Support Group at custserve@whelen.com or by calling (860) 526-9504 and then return the product freight prepaid to Whelen at 51 Winthrop Road, Chester, CT 06412-0684 or an Authorized Whelen Repair Center. The Repair Center will return the repaired unit, transportation cost prepaid.

**Product families to which the limited lifetime warranty applies:**

- Freedom Series Lightbars
- M-Series
- L31 Series
- 86 Series
- Micro Freedom Series
- Pioneer Scene Lighting (Excludes Pioneer Life)
- PSTANK2
- PSCOMP - Illumination Series
- TANF65 or 85 TA Series
- 6" and 8" LED Ambulance Series

**Vehicles to which the lifetime limited warranty applies:**

This warranty applies to the above-listed products installed only on fire and emergency medical services apparatuses built by original equipment manufacturers and listed in NFPA 1901, NFPA 1906, NFPA 1917, KKK-1882F, CAAS, and AMD standards, including pumpers, rescues, aerials, wildland, and ambulances.

## Limitations on Limited Lifetime Warranty

1. This warranty does not apply to normal cosmetic wear, i.e., lens degradation and/or coloring.
2. All warranted products must have been purchased through an authorized Fire & EMS original equipment manufacturer (OEM)
3. This warranty is not applicable to any Whelen product that has failed from damage as a result of incompatible chemicals (including de-icing or road treatment) or cleaning products, or due to accident, abuse, misuse, neglect, physical damage, improper installation, ordinary wear and tear, excessive voltages, or any alteration to the product that affects, in Whelen's judgment, the product's intended use and service, cut wires eliminating the possibilities of repair and/or interactions with third party devices
4. Each Whelen product sold is covered only by the official warranty in effect at the time of purchase.
5. Whelen will not be held liable for any incidental, punitive, special or consequential damages, including without limitation, loss of use of the vehicle or equipment, loss of time, inconvenience, loss of profit, loss of business or any other damages, losses, or expenses arising from the sale, handling, or use of the products and assumes no responsibility or liability for expenses incurred in the removal and/or re-installation of products requiring service and/or repair; nor the packaging, handling, and shipping to the Factory Repair Center or Authorized Whelen Repair Center; nor for the handling of products returned from the repair center after service or repair.
6. This warranty will be void when using or substituting other than all genuine Whelen system components, such as remote head assemblies, shielded cables, siren amplifiers, and siren speakers.
7. THIS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Whelen reserves the right to modify this warranty statement at any time or discontinue, modify, or upgrade any products of its manufacture with design improvements without prior notice.

All Non-Whelen manufactured items that are sold by Whelen are covered by that manufacturer's warranty and are excluded from this warranty statement (such as GTT Emitters and batteries).

This warranty gives you specific rights, and you may also have other rights which vary from state to state.

WHELEN ENGINEERING COMPANY, INC.
51 Winthrop Road, Chester, CT 06412-1036
(860) 526-9504 www.whelen.com

† The only AUTHORIZED WHELEN REPAIR CENTER(S) are predetermined by the Whelen Factory via official listing obtained from Whelen Engineering Company, Chester, CT.

 

7

MES | SHIPMAN'S FIRE EQUIPMENT CO.

SUTPHEN SINCE 1890

# References

Updated 3/27/22

### Hartford Fire Department

Danny Madden
Apparatus Superintendent
(806) 757-4591

Six (6) Custom Engines
Eight (8) 95' Mid-Mount Platforms

### Southington Fire Department

Jimmy Paul
Chief
(860) 681-5591
jpaul@southington.org

Three (3) Custom Engines
One (1) Custom Squad
One (1) 100' Mid-Mount Platform on Order

### Manchester Fire-Rescue

Michael Tomkunas
Truck Committee Chairman
(860) 647-3266

Two (2) Custom Engines

### Ellington Fire Department

Deputy Chief Robert Smith
(860) 250-6386
Robert.smith@ubs.com

Two (2) Custom Engines

### Wallingford Fire Department

Chief Joseph Czentnar
(203) 294-2730
jczentnar@wallingfordfd.com

Two (2) Custom Engines.
One (1) 75' Rear Mount Ladder-Quint

### State of CT Fire Academy

Jeff Morrissette-State Fire Administrator
(860) 627-6363
Jeff.morrissette@ct.gov

One (1) 100' Mid-Mount Ladder Quint
One (1) Custom Engine
One (1) Commercial Cab Engine

### Clinton Fire Department

Chief Brian Manware
(203) 627-8258
bmanware@clintonct.org

One 110' Mid-Mount Platform-Quint
One (1) Custom Engine

### Guilford Fire Department

Chief Charlie Herrschaft
(203) 453-8058
gfd10@snet.net

One (1) 100' Mid-Mount Platform-Quint

8

# THE SUTPHEN EXPERIENCE

## What to Expect when you Buy a Sutphen

The act of purchasing a fire apparatus is more than a mundane business transaction. Budget preparation, equipment specifications and truck layout all require one thing, time. At Sutphen, we value the substantial commitment your department makes when embarking on such an endeavor, and that's why we focus on one element often overlooked by other manufacturers, the Experience.

Sutphen has compiled an unmatched staff of expert sales professionals, cutting-edge engineers and skilled craftspeople, whose tenure is unmatched in our industry. Our team utilizes its unparalleled knowledge base to give our customers an unforgettable experience, one that only a family-owned company can provide. This unrivaled experience creates an intense loyalty between customers and Sutphen.

For 130 years, Sutphen Corporation has been globally recognized as an extreme-duty builder and ground-breaking pioneer in fire industry innovation, new technology and customer experience. We believe that engineering a precise piece of fire equipment is truly a collaborative effort between the customer and Sutphen representatives. From the moment the idea beings to formulate at your department, to the day you back the truck into the station, and throughout the life of your truck, Sutphen is here for you. Beyond doubt, the entire process is a journey in creativity and problem solving through which relationships are fostered and loyalty to each other is developed.

Sutphen is proud to be a true single source manufacturer. To you, this means your needs after the sale will be fulfilled with just one call to a Sutphen representative for training, parts, service or warranty items. To us, it means having the honor to work with you every step of the way.

The Experience does not end when your truck leaves our Sutphen facility – it continues with you beyond our doors and into your community. This hand-on, member-of-the-family approach, distinguishes us as the industry leader for customers after the sale. We are the apparatus manufacturer that can guarantee a superior vehicle exactly to specification, an expedient delivery process and an unequaled warranty management.

We offer you a professional partnership that will endure the life of your career and ours. After all, it's 130 years later and you can still speak with a Sutphen.

***Come be a part of the Sutphen Experience!***

## VI. MID-INSPECTION OF TRUCK IN PROCESS (OPTIONAL)

During the optional mid-inspection, customers can visit the production facility to inspect and review their apparatus before the final stages of production.

## VII. FINAL INSPECTION OF APPARATUS

During final inspection, customers will visit Sutphen's professional, in-factory customer final inspection area which is fully equipped with creepers, flashlights, tape measures, copies of the final shop order, change orders and factory support. During the final inspection, customers can complete a final road test, pump test and more. Once the inspection is finished, the list of adjustments are then completed.

## VIII. DELIVERING AND DEMONSTRATION OF OPERATION AND MAINTENANCE

A professional delivery engineer, from a Sutphen factory or dealer, will work with customers through an overview of the truck including pump operations, driving techniques and apparatus maintenance. Along with hand-ons training, the delivery engineer will review the manual for operations and maintenance, as well as miscellaneous paperwork. Finally, the engineer will review accompanying data, bill of material, manuals, pictures, wiring documentation, build documents and more.

## IX. CUSTOMER SERVICE AND PARTS SUPPORT FOR LIFE OF APPARATUS

Throughout the warranty period and life of your apparatus, Sutphen is there for our customers. With Sutphen 24/7 technical support and both Sutphen and its dealers stocking parts, we are here to help customers when they need it most. Additionally, individual service contracts are available for each apparatus.

SUTPHEN®

*Family Owned and Operated since 1890!*

**Sutphen East Corporation**

55 Innovation Drive
Lake Ariel, PA 18436
Phone: (844)-776-2889
Fax:(570)-666-9130

Sutphen East Corporation is one of Sutphen's five manufacturing factories. Previously located in Monticello, New York, the Sutphen East facility moved to a new 35,000 sq.ft. facililty located in Lake Ariel, PA in 2017. This facility manufacturers both aluminum and stainless-steel pumpers, aluminum rescues as well as commercial pumpers and tankers.

Sutphen East handles repairs and service for fire departments in the local region. The factory service department is comprised of three service bays and two on the road service trucks. Minor repairs to major restoration, and everything in between, is done here, including refurbishments.

SUTPHEN

# Fire Apparatus Manufacturers' Association

FAMA

## *Certificate of Membership*

In accordance with its bylaws,
FAMA affirms that

**Sutphen Corporation**

meets the membership qualifications
and is a member in good standing through

**2022**

Oran McNabb
FAMA Board President

9

MES | SHIPMAN'S
FIRE EQUIPMENT CO.


# Shipman's Apparatus Service Center

Providing service to Fire Departments in Connecticut, Rhode Island, and Massachusetts for more than 65 years

Comprehensive service center is staffed with dedicated, EVT-certified technicians

Supporting full-service repairs and maintenance of emergency vehicles from all manufacturers

## WHAT WE OFFER

- Complete Service Center
- Fully-Equipped Mobile Service Available 24/7
- Pick-Up and Delivery Services Available
- Secured Facility in Waterford, CT for inside storage
- Authorized sales, service, and parts for Sutphen and SVI Apparatus

## MES/Shipman's Fire Equipment

172 Cross Road
Waterford, CT

70 Foster Road
Waterford, CT

860-442-0678

# Emergency Vehicle Technician

## Certification Commission, Inc.

# Thomas Swaney

is certified in the areas listed below:

| | Expires: |
|---|---|
| **Design & Performance Standards of Fire Apparatus** | **05/04/2024** |
| **Fire Pumps and Accessories** | **05/04/2024** |
| **Aerial Fire Apparatus** | **10/17/2025** |
| **Allison Automatic Transmissions** | **10/28/2022** |

Kevin Roberts, President

# Emergency Vehicle Technician

## Certification Commission, Inc.

# Carl Miles

is certified in the areas listed below:

| | Expires: |
|---|---|
| Maintenance, Inspection, & Testing of Fire Apparatus | 10/13/2023 |
| Fire Pumps and Accessories | 01/25/2024 |
| Fire Apparatus Electrical Systems | 10/13/2023 |
| Aerial Fire Apparatus | 06/01/2024 |
| Allison Automatic Transmissions | 10/12/2024 |
| Hydraulic Systems | 06/01/2024 |

Kevin Roberts, President

# Emergency Vehicle Technician

## Certification Commission, Inc.

# Carl Miles

is certified in the areas listed below:

| | Expires: |
|---|---|
| Maintenance, Inspection, & Testing of Ambulances | 05/04/2024 |
| Design & Performance Standards of Ambulances | 05/04/2024 |

Kevin Roberts, President

# Emergency Vehicle Technician

## Certification Commission, Inc.

# Jason Tagg

is certified in the areas listed below:

| | Expires: |
|---|---|
| Maintenance, Inspection, & Testing of Fire Apparatus | 05/07/2026 |
| Design & Performance Standards of Fire Apparatus | 06/05/2026 |
| Fire Pumps and Accessories | 05/07/2026 |
| Fire Apparatus Electrical Systems | 10/16/2026 |
| Aerial Fire Apparatus | 06/05/2026 |
| Allison Automatic Transmissions | 10/16/2026 |

Kevin Roberts, President

# Emergency Vehicle Technician

## Certification Commission, Inc.

# Jason Tagg

is certified in the areas listed below:

| | Expires: |
|---|---|
| **Design & Performance Standards of Aircraft Rescue & Fire-Fighting Vehicles** | **06/04/2027** |

Kevin Roberts, President

# Emergency Vehicle Technician

## Certification Commission, Inc.

# Jason Tagg

is certified in the areas listed below:

| | Expires: |
|---|---|
| **Design & Performance Standards of Ambulances** | **06/04/2027** |

Kevin Roberts, President

# SUTPHEN CORPORATION

# CERTIFICATE

## OF COMPLETION

THIS CERTIFICATE IS AWARDED ON DECEMBER 9th, 2021 TO

## Jason Tagg

FOR COMPLETION OF

SUTPHEN AERIAL TRAINING

TODD WINNENBERG, GENERAL MANAGER
SUTPHEN CORPORATION

JANELLE KIZER, TRAINING MANAGER
SUTPHEN CORPORATION

10

SUTPHEN

FAMILY OWNED
SINCE 1890

October 1, 2021

To Whom it May Concern,

Please be advised that effective September 13, 2021 MES – Municipal Emergency Services I Shipman's Fire Equipment Co., with offices located at 172 Cross Road Waterford, CT 06385 and service center at 70 Foster Road Building F Unit #1 Waterford, CT 06385 is the authorized sales, service & warranty center, and parts sales representative for the Sutphen Corporation in the states of Connecticut, Rhode Island and Massachusetts. As such, Jim Lyons is authorized to sign and submit bid proposals and documents on behalf of the Sutphen Corporation.

Please contact our office @ 614.889.0874 with any questions.

Best regards,

Dillon P. Naylor

Dillon P. Naylor
Sales Territory Manager

Sutphen Corporation
PO Box 158 • Amlin, OH 43002-0158
6450 Eiterman Road • Dublin, OH 43016-8711
Tel 614 889-1005 • Toll Free 800 848-5860 • Fax 614 889-0874
www.sutphen.com • Sutphen@sutphencorp.com

SAFETY
SECURITY
SERVICE

DMV

# STATE OF CONNECTICUT

Department of Motor Vehicles
60 State Street, Wethersfield, CT 06109

License Number

N2775

Effective: December 8 , 2021
Expiration: November 30, 2023

**MUNICIPAL EMERGENCY SERVICES INC**
70 FOSTER RD BLDG F UNIT 1
WATERFORD, CT 06385

## New Dealer

Authorized Makes
FIRE APPARATAUS

**NON TRANSFERABLE. If business is sold, transferred, or discontinued, return this license and current number plates to Department of Motor Vehicles.**

SAFETY
SECURITY
SERVICE

DMV

# STATE OF CONNECTICUT

Department of Motor Vehicles
60 State Street, Wethersfield, CT 06109

License Number

M0996

Effective: June 15, 2020
Expiration: June 30, 2022

SUTPHEN CORPORATION
6450 EITERMAN RD
DUBLIN, OH 43016

## Manufacturer

Authorized Makes
FIRE APPARATAUS

**NON TRANSFERABLE. If business is sold, transferred, or discontinued, return this license and current number plates to Department of Motor Vehicles.**

# NEW ENGLAND LINE CARD

A NATIONAL LEADING DISTRIBUTOR OF FIRST RESPONDER EQUIPMENT

## BREATHING AIR

- Bauer Compressors
- RevolveAir Systems
- 3M™ Scott™ Air-Paks

## BREATHING AIR SERVICES

- Compressor Service & Repair
- On-Site OHD Fit Tests
- 3M™ Scott™ Repairs & Adjustments
- 3M™ Scott™ Functional Testing
- 3M™ Scott™ Flow Testing
- Hydrostatic Testing

## RESCUE, RESCUE TOOLS, & STABILIZATION

- Holmatro
- Makita
- Paratech
- CMC Rope Rescue
- PMI Rope
- AJAX Rescue Tools
- Rescue 42
- Turtle Plastics
- Sterling

## RESCUE TOOL SERVICES

- Holmatro Tool Services
- Paratech Service & Repair

## HELMETS

- Bullard
- Pacific Helmets
- Fire-Dex

## TURNOUT GEAR

- Fire-Dex
- Honeywell

## BOOTS

- Fire-Dex
- Honeywell
- Black Diamond

## GLOVES

- Fire-Dex
- Veridian
- Dragon Fire
- Mechanix Wear
- FireCraft®

## HOODS

- Fire-Dex
- PGI
- Majestic Fire Apparel

## BODY ARMOR

- Armor Express
- Point Blank / Paraclete
- GH Armor

## TOOLS & MOUNTING BRACKETS

- Fire Hooks Unlimited
- Leatherhead Tools
- Paratech
- Ziamatic
- Performance Advantage Company
- Polytech America

172 Cross Rd, Waterford, CT 06385

860.442.0678 | MES SHIPMAN'S FIRE EQUIPMENT CO. | MESFIRE.COM

# ADDITIONAL BRANDS

## UNIFORMS / STATION WEAR

- Elbeco
- 5.11 Tactical
- First Tactical
- Workrite
- Spiewak
- Propper
- Danner
- Reebok
- Flying Cross

## UNIFORM SERVICES

- 30+ Sewing Machines
- Customization & Embroidery
- On-Site Uniform Services
- Signature Online Stores

## COMMUNICATIONS

- Safariland TCI Redline

- 3M™ Scott™

## NOZZLES & APPLIANCES

- Akron Brass
- Task Force Tips

## FOAM

- National Foam

## FIRE HOSE

- Matex Hose
- Snap-Tite Hose

## EXTINGUISHER

- Amerex Fire

## VENTILATION & SAWS

- Tempest
- Fire Hooks Unlimited
- Super Vac
- Team Equipment
- Truckman's Choice Fire Rescue Saw

## SERVICES

- Pump Testing
- Extinguisher Services
- Signature Online Stores
- SCBA Service & Repair
- Compressor Service & Repair
- Uniform Services
- Apparatus Service & Repair
- Rescue Tool Service & Repair

## APPARATUS

- Sutphen
- SVI Trucks

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11

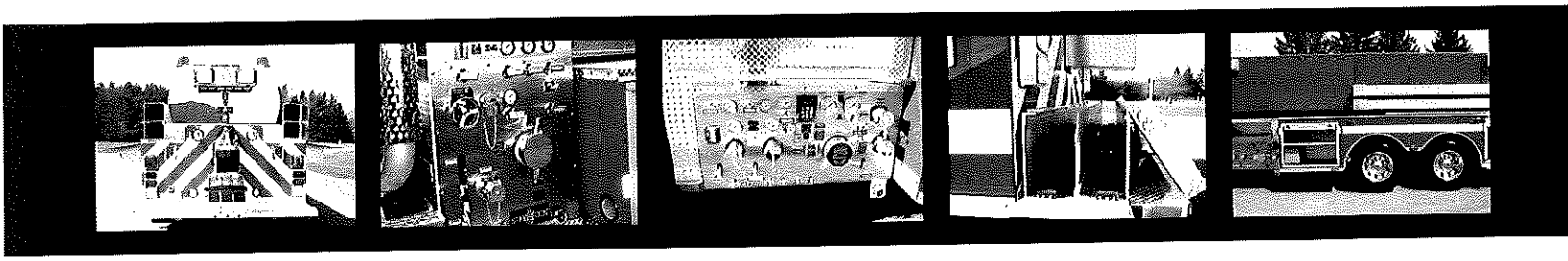
# SUTPHEN

FAMILY OWNED
SINCE 1940

## anker – Elliptical or Wetside Configuration


Shown with Optional Equipment

your choice of elliptical, or wetside configuration and numerous chassis options you can configure your Sutphen tanker to your exact needs. These features, along with the quality and dependability you've come to know and trust, make Sutphen the unmatched choice in tankers.



### CHASSIS

- Choose from Kenworth, Freightliner, International
- Single Axle (Up to 2000 gallon tank) or Tandem Axle (Up to 4000 gallon tank)
- Engine options from 315 HP to 515 HP

### PUMP FEATURES

- Hale Side Kick in 500, 750 and now 1000 gpm
- Custom pump module up to 2000 gpm
  No pump option also available
- Stainless steel pump panels
- Easy to use lift up drains

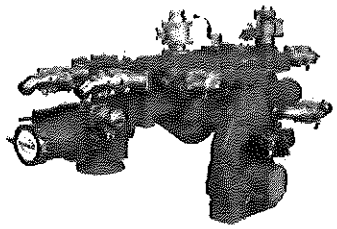
### BODY FEATURES

- #304 Stainless steel, Huck-Bolted body standard, 3/16" Aluminum Body optional
- Roll up doors standard
- Large full depth compartments
- Brushed stainless steel compartment interiors reflect light and are maintenance free
- Sweep out compartment floors

### TANK FEATURES

- 1500-4000 Gallon capacity
- Elliptical or Wetside configuration (Hosebed available with Wetside configuration)
- Elliptical available in painted, natural, or mirrored stainless wrap finish
- Lifetime warranty
- Easily repairable
- Stainless steel tank cross support system
- Swivel dump or rear and side dumps available
  Manual, pneumatic, or electric operated

# Qmax Single Stage Water Pump



## STYLE

Hale's Qmax single-stage centrifugal fire pump generates NFPA 1901 rated flows of up to 2250 GPM (8515 LPM). The one-piece body allows easier access to the impeller and mechanical seal. This innovative design minimizes piping requirements and makes routine maintenance easier.

## Features

- Generates NFPA 1901 rated flows up to 2,250 GPM (8,515 LPM) from draft
- Performance range of 0 to 3000 GPM based on available engine power and water source.
- Large suction inlets and full flow waterways cut friction loss and deliver maximum pressure at the discharge valves. Low friction losses allow flows of up to 1,500 on 3-inch and 2,600 GPM on 4-inch pump body openings (from a positive water source)
- Designed to use 6" suction Master Intake Valves (MIV) which have no impact to single hose 1,500 GPM rating
- Dual cutwaters. Smooth water flow delivery to the cast pump body with no twists, turns or restrictions that add turbulence
- Strength in design. A one piece upper pump body minimizes potential piping leaks and makes maintenance and service easy
- Horizontally split body allows for easy pump rebuilds without removing the pump body and plumbing resulting in less downtime
- Hale auto-lube system force feeds lubrication system eliminating the need for second packing or seal arrangement
- Standard G gearbox is capable of handling 16,000 lb. feet of torque (Optional K gearbox capable of handling 18,500 lb. feet of torque)
- Also available with optional SmartCAFS

## Specifications

| Certification(s) | NFPA 1901 |
|---|---|

## Applications/Solutions

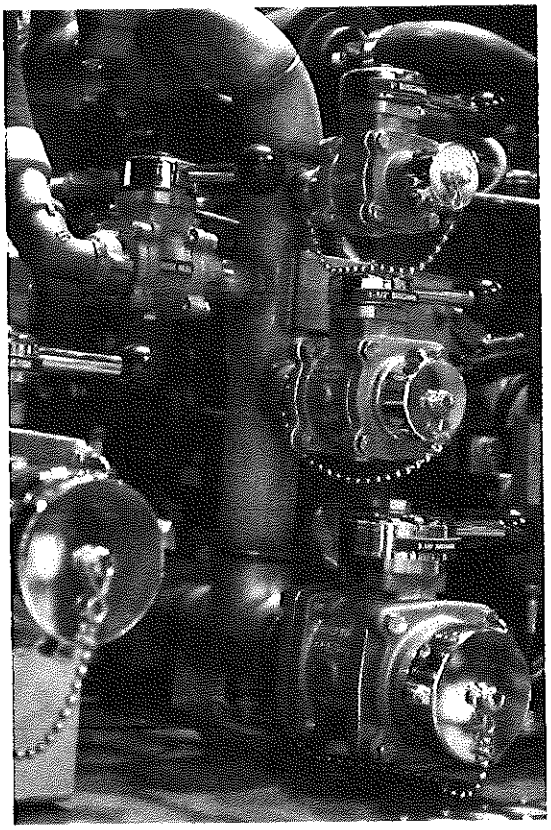
- Fire OEMs
- Firefighting - Industrial
- Firefighting - Structural
- Petro-Chemical

**1-800-533-3569 | haleproducts.com | halecustomerservice@idexcorp.com**

# Heavy Duty Brass Swing-Out™ Valves

Akron Brass offers a wide variety of apparatus valves to meet the demands of today's fire service. All Swing-Out Valves are designed for operating pressures of at least 250 psi (17 bar) and meet the NFPA 1901 Standard for valve opening and closing speed control when operated with a gear actuator, electric actuator or Slo-Cloz™. In addition, every valve is factory tested in accordance with current NFPA Standards and backed by a 10 year warranty.

- A single valve body that will accept a variety of actuators.
- HydroMax™ technology: A ball geometry providing superior gating performance and flow characteristics
- No lubrication or regular maintenance required
- Simple two seated design (no O-Rings to cut or lose during assembly or maintenance)
- Wide range of available adapters
- High quality brass body cast, machined and assembled at our facility in Wooster, Ohio, USA
- Available in 1"- 4" sizes
- Ball available in stainless steel or high performance Polymer



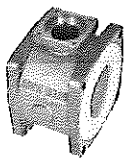
High Performance Polymer Ball with HydroMax

Stainless Steel Ball with HydroMax

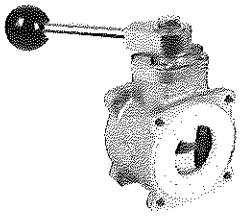

## 1" and 1.5" Swing-Out Valves

Commonly used on smaller trucks and lower flow applications, the 1" and 1.5" Swing-Out valves are available with a wide range of adapters and are simple to install and maintain throughout the life of the apparatus.

### Valve Body



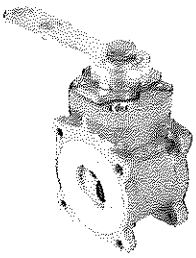
| Style | Size | Ball Type | Operating Pressure (psi) | Hydrostatic Pressure (psi) |
|---|---|---|---|---|
| 8810 | 1" | Stainless Steel | 500 | 1000 |
| 8910 | 1" | Polymer | 500 | 1000 |
| 8615 | 1.5" | Stainless Steel | 250 | 500 |
| 8815 | 1.5" | Stainless Steel | 250 | 500 |
| 8915 | 1.5" | Polymer | 250 | 500 |



Style 8815 with TS Handle

### Actuator Options

| Actuator | Type | Part # | # of Holes | Length | Available Accessories | Compatibility Style Numbers |
|---|---|---|---|---|---|---|
| RI | Manual | 721236* | 2 | 3 1/2" | TM, 1477 | 8810, 8910 8815, 8915 |
| | | 109150 | 1 | 3 1/4" | | |
| TS | Manual | 78150064 | - | 5" | - | 8810, 8910, 8815, 8915 |
| | | 78150062 | - | 8" | | |
| TSC | Manual | 78150065 | - | 5" | - | 8810, 8910, 8815, 8915 |
| | | 78150087 | - | 8" | | |
| EA | Electric | 86158002^ | - | 7" | 9327, 93333, 93335 | 8615, 8915 |



Style 8810 with RI Handle

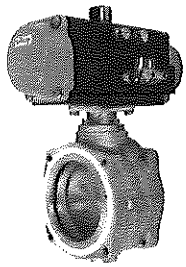
* Standard
^Standard 12V

## 4" Swing-Out Valves

Akron's 4" heavy duty valves are designed for tank-to-pump use, deck gun or other higher flow applications and are used with air, gear or electric actuation.

### Style 8840 Heavy Duty 4" Swing-Out Valve With Flat Disk Design

- Flat disk concept has spherical seating surface that easily closes and seals on the seat
- Short 4" long body length. Can be used on side discharge applications and in restricted pump compartment space
- Easy-to-operate sealing system requires less torque to open and close the valve
- Reduced gear ratios:
  - Electric: 25:1 ratio - 8 seconds full open to close
  - Handwheel 50:1 ratio - 12 ½ turns
- Weight: 36 lbs. (16.3 kg) with electric actuator, less adapters
- Wide range of available adapters



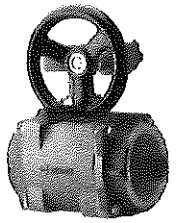
Style 8840 with Air Actuator

### Style 8940 4" Swing-Out Valve

- High performance full flow polymer ball
- Number of turns for full open/close of gear actuator: 16

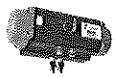
**Valve Body**

| Body | Style | Size | Width | Ball Type | Operating Pressure (psi) | Hydrostatic Pressure (psi) |
|---|---|---|---|---|---|---|
|  | 8840 | 4" | 4" | Flat Bronze Disk | 250 (In Flow Direction) 100 (Opposite Flow Direction) | 500 |
|  | 8940 | 4" | 6" | Round Polymer Ball | 250 | 500 |

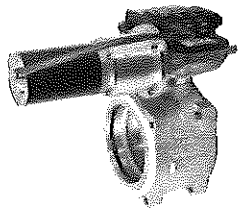


Style 8940 with Gear Actuator

**Actuator Options**

| Actuator | Type | Part # | # of Holes | Length | Available Accessories | Compatibility Style Numbers |
|---|---|---|---|---|---|---|
|  | Air | 88400874 | - | 11 ¼" | - | 8840 |
| | | 79600253 | - | 13 13/16" | | 8940 |
|  | Manual Gear | 88400852 | - | - |  8630 | 8840 |
| | | 78400119 | - | - | | 8940 |
|  | Electric | 88405076 | - | 12 ¼" |  9327 93333 93335 | 8840 |
| | | 89405000^# | - | 12 ¼" | | 8940 |

^Standard 12V
# More options available



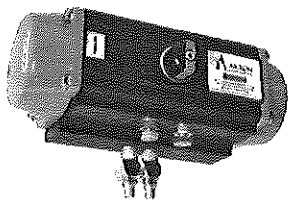
Style 8840 with Electric Actuator

# Swing-Out™ Valve Actuators

## Air Actuator (AIR)

Air Actuators operate off the apparatus air supply and are equipped with an emergency override. Designed for full open/close applications only. Units are supplied with two air flow control valves to regulate the opening and closing valve speed to comply with the current NFPA 1901 Standard.

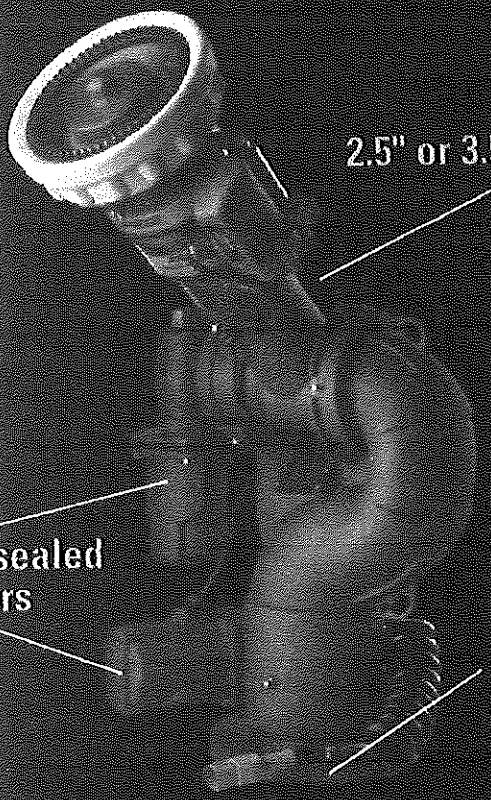
- Operates from -40° F to 125° F and requires 100-120 psi air pressure
- Available on 4" Swing-Out and all Butterfly Valves
- Solenoid and switch not included



Air Actuator shown with factory supplied Air Control Valves

# COBRA™ EXM2 1500 GPM/6000 LPM

Offered in either **1250 GPM or 1500 GPM** along with **Standard or Heavy Duty** versions, the Cobra EXM2 is the preferred monitor for aerial apparatus OEMs. With its 6" swing radius and 16" stow height, the Cobra EXM2 fits into small spaces on aerials and platforms. Add an SM Series nozzle and you have the perfect product for your new aerial device.




## SPECIFICATIONS

| | |
|---|---|
| Model: | 7200X2/7250X2 |
| Max Flow: | 1250 GPM (5000 LPM)<br>1500 GPM (6000 LPM)* |
| Max Pressure: | 500 PSI (34.5 bar) Limited Duty |
| Inlet: | 3"-150# Flg, 4"-150# Flg, 3" NPT,<br>3" BSPT, & DN80-PN16* |
| Outlet: | 2.5" / 3.5" Male NHT & BSPP |
| Travel: | Vertical: -45° to +120° (165°) w/ Extended Travel Horizontal: L175 to R175 (350°) |
| Voltage: | 12 or 24 VDC compatible |
| Control: | CANbus J1939 |
| Communication: | 915 MHz RF - FCC<br>868 MHz RF - CE |
| Material/Finish: | Teflon impregnated, hard anodized Elk-O-Lite® |
| Swing Radius: | 6" (152mm) 180°, 8" (203mm) 360° |
| Stow Height: | 16" (406mm) |
| Weight: | 31 lbs (14 kg) / 32 lbs (14.5 kg) |

## Vehicle Applications

- Deck Mount
- Aerials/Platforms

Wi-Fi CE

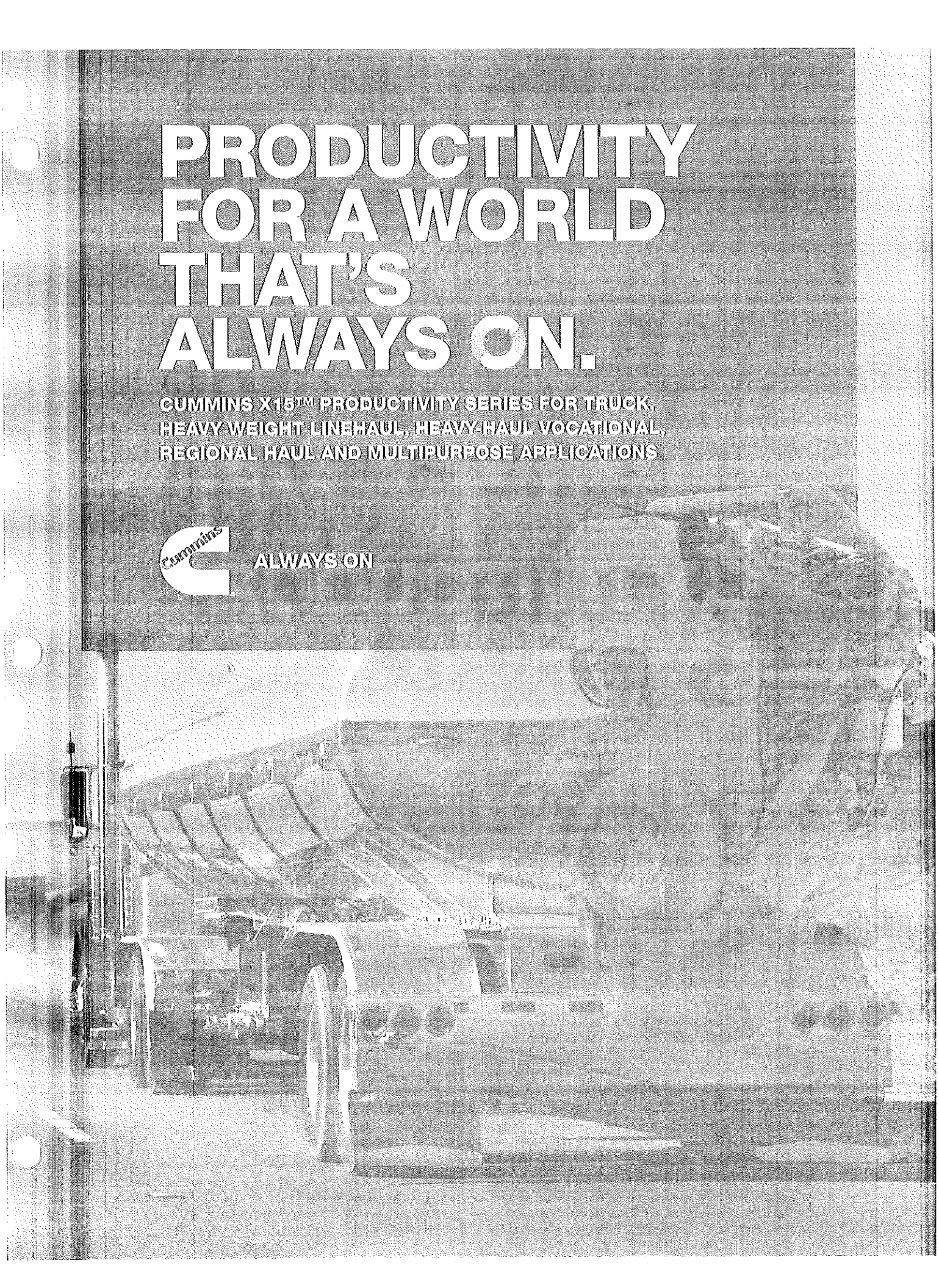
| COMPONENTS & OPTIONS | | | MODEL |
|---|---|---|---|
| Electric Nozzles | X-Stream Series Automatic | 2.5" Inlet: 350-1000 GPM (1400-4000 LPM) | SM-1000E |
| | | 2.5" Inlet: 350-1250 GPM (1400-5000 LPM) | SM-1250E |
| | | 3.5" Inlet: 500-1500 GPM (2000-6000 LPM) | SM-1500E |

# PRODUCTIVITY FOR A WORLD THAT'S ALWAYS ON.

**CUMMINS X15™ PRODUCTIVITY SERIES FOR TRUCK, HEAVY WEIGHT LINEHAUL, HEAVY HAUL VOCATIONAL, REGIONAL HAUL AND MULTIPURPOSE APPLICATIONS**

Cummins

ALWAYS ON

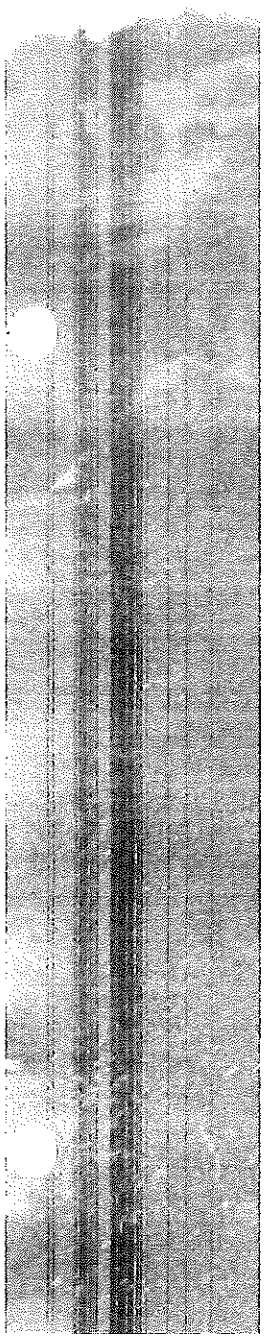


## SMALL IMPROVEMENTS. BIG DIFFERENCE.

The X15 Productivity Series ratings with shared Efficiency Series hardware feature a new main cap, a larger thrust bearing and an enhanced crank forging and machining for improved performance, reliability and durability. A modified piston design with a higher compression ratio helps improve power cylinder performance.

## X15 MAINTENANCE INTERVALS. GO LONG.

Cummins X15 engines have some of the longest maintenance intervals in the transportation industry. Our fully-serviceable Single Module™ aftertreatment system has built-in sensors that tell you when the DPF finally needs to be changed – so you get every single mile you can out of it.



| ITEM | SEVERE <6.0 MPG | SHORTHAUL 6.0 - 6.9 MPG | NORMAL 6.0 - 6.9 MPG | LIGHT >7.0 MPG |
|---|---|---|---|---|
| OIL DRAIN INTERVAL LEVEL | 25,000 Mi<br>40,000 Km | 40,000 Mi<br>64,000 Km | 50,000 Mi<br>80,000 Km | 75,000 Mi<br>120,000 Km |
| X15 OIL DRAIN WITH VALVOLINE PB* | 30,000 Mi<br>48,000 Km | 45,000 Mi<br>72,000 Km | 55,000 Mi<br>89,000 Km | 80,000 Mi<br>130,000 Km |
| X15 OIL DRAIN WITH CUMMINS OILGUARD*[1] | extensions available | extensions available | extensions available | Up to 100,000 Mi<br>160,000 Km |
| FUEL FILTER[2] | 25,000 Mi<br>40,000 Km | 40,000 Mi<br>64,000 Km | 50,000 Mi<br>80,000 Km | 75,000 Mi**<br>112,000 Km |
| DIESEL PARTICULATE FILTER[3] | 250,000-400,000 Mi<br>400,000-640,000 Km | 400,000-600,000 Mi<br>640,000-960,000 Km | | 600,000-800,000 Mi<br>960,000-1,300,000 Km |
| DIESEL EXHAUST FLUID FILTER | 300,000 Mi<br>480,000 Km | 300,000 Mi<br>480,000 Km | | 300,000 Mi<br>480,000 Km |
| VALVE ADJUSTMENT | 500,000 Mi<br>800,000 Km | 500,000 Mi<br>800,000 Km | | 500,000 Mi<br>800,000 Km |

If combined percent idle time plus power takeoff (PTO) time is greater that 40% for shorthaul, normal or light intervals, use the lower drain interval.

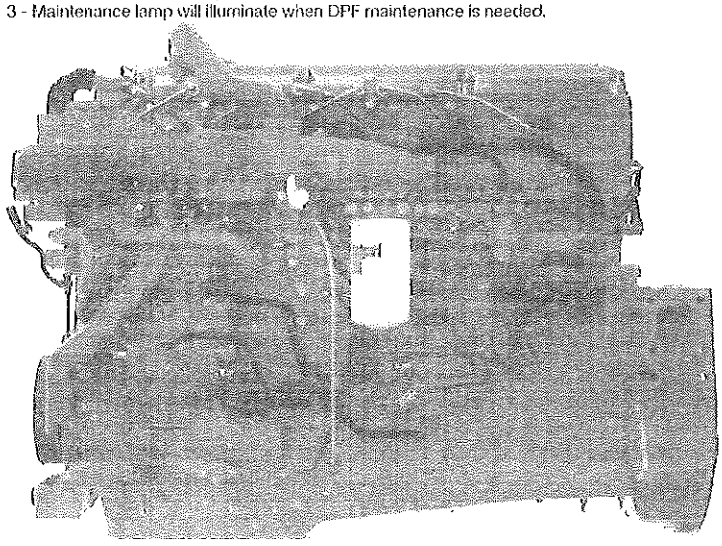
* Cummins recommends Valvoline Premium Blue™ (PB 8600ES)

** Extending the fuel filter interval from 60,000 miles to 75,000 requires use of an extended filter available through Cummins service network.

1 - Up to 100,000-mile oil drain interval with participation in Cummins OilGuard® oil analysis program.

2 - For Premium Blue users, the fuel filter interval matches the ODI.

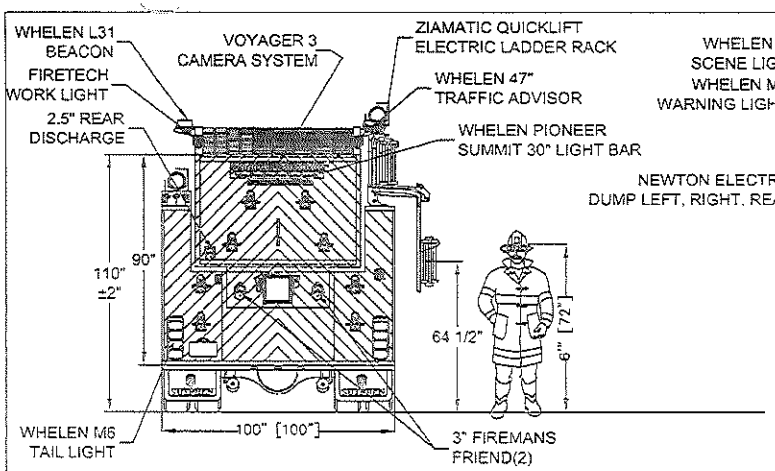
3 - Maintenance lamp will illuminate when DPF maintenance is needed.

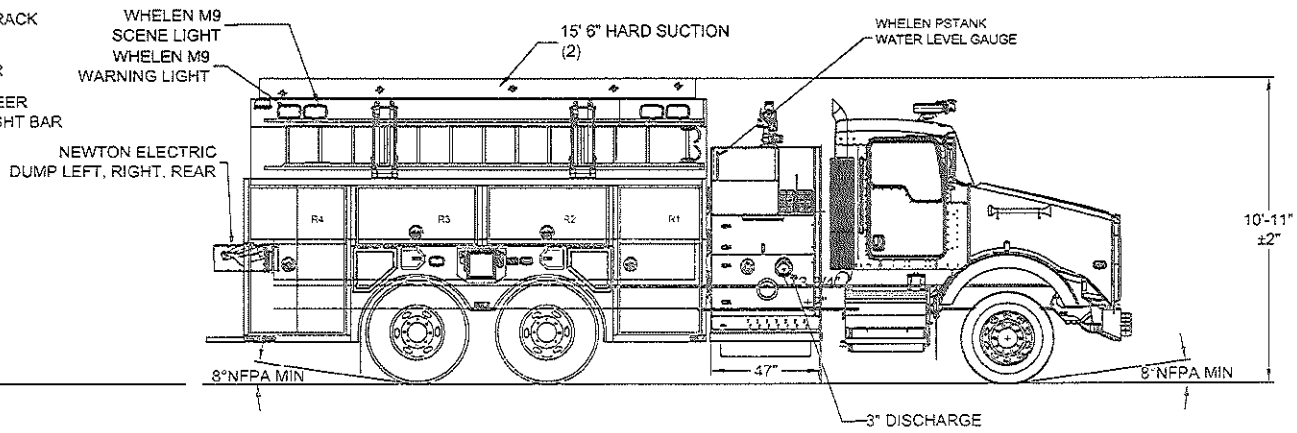


## X15 PRODUCTIVITY SERIES FEATURES.

- VGT Turbocharger – Highly reliable and precise design for rapid acceleration
- XPI Fuel System – High pressure enables multiple injection events per cycle for industry-leading fuel economy and quieter operation
- Single-Module™ Aftertreatment System – A compact and lightweight, fully serviceable system that offers increased ash capacity and extended maintenance intervals
- Longer-Lasting Fuel And Lube Filters – Superior holding capacity provides better protection and enables longer service intervals, and NanoNet™ media provides industry-leading protection at 3 microns
- Higher-Capacity Electronic Control Module – This allows for full integration of data inputs from all subsystems, optimizing performance
- Cummins Engine Brake – With up to 600 braking horsepower, it's the most powerful in the industry. Stronger braking capacity reduces wear on service brakes and replacement costs
- Connected Diagnostics™ – Capable of transmitting engine/vehicle data via telematics for remote troubleshooting

12



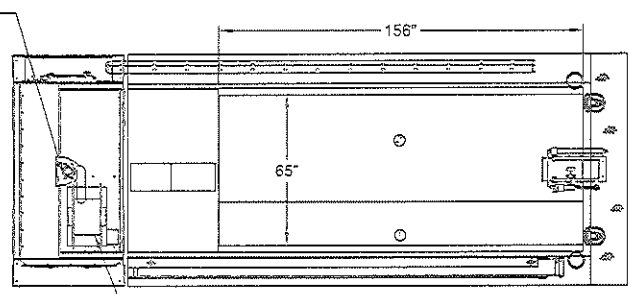

| Left Side Compartmentation | | | | |
|---|---|---|---|---|
| Compt. | Doors | Opening Dimensions | Inside Dimensions WxHxD | Volume |
| L1 | Hinge | 32x60 | 40x56x24.25/10.25 | 21 CU FT |
| L2 | Hinge | 48x22 | 56x28x10.25 | 9.3 CU FT |
| L3 | Hinge | 48x22 | 56x28x10.25 | 9.3 CU FT |
| L4 | Hinge | 32x60 | 40x56x24.25/10.25 | 21 CU FT |
| Right Side Compartmentation | | | | |
| Compt. | Doors | Opening Dimensions | Inside Dimensions | Volume |
| R1 | Hinge | 32x60 | 40x56x24.25/10.25 | 21 CU FT |
| R2 | Hinge | 48x22 | 56x28x10.25 | 9.3 CU FT |
| R3 | Hinge | 48x22 | 56x28x10.25 | 9.3 CU FT |
| R4 | Hinge | 32x60 | 40x56x24.25/10.25 | 21 CU FT |

HALE Q-MAX 1500 GPM SS
3000 GAL WATER TANK

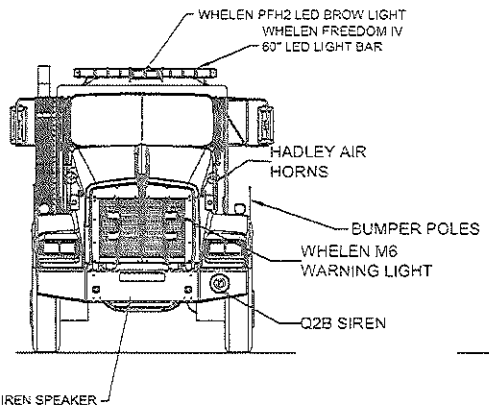
Total Volume
135.1 CU FT

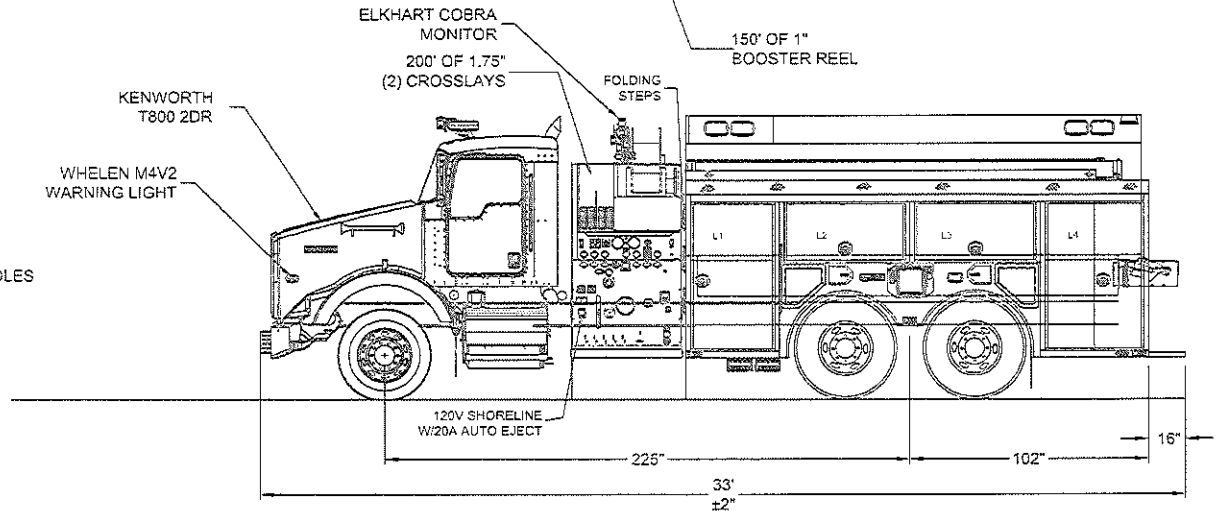
LADDER RACK
35' 3 SEC
16' ROOF

FENDER STORAGE
LFF: AIR PACK, SINGLE SCBA
LRF: AIR PACK, SINGLE SCBA
RFF: AIR PACK, SINGLE SCBA
RRF: AIR PACK, SINGLE SCBA




Hose Load
1:500ft of 3"
2:1000ft of 5"




DIMENSIONS SHOWN ON THIS DRAWING ARE APPROXIMATE AND ARE SUBJECT TO MINOR DEVIATIONS DURING CONSTRUCTION.

IN THE EVENT OF A DISCREPANCY BETWEEN THE SUTPHEN SPECIFICATIONS AND DRAWING, THE SUTPHEN SPECIFICATIONS SHALL PREVAIL.

DRAWING IS FOR REFERENCE ONLY, SOME ITEMS

CUSTOMER APPROVAL

NAME:

TITLE:

DATE:

| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| - | - | - | - |

DRAWN BY: RACHU

DATE: 7-19-22

SUTPHEN

LEDYARD FIRE COMPANY DISTRICT #1
LEDYARD, CT

COMMERCIAL WET SIDE TANKER - SWT-4X6