



MIDWEST FIRE®

**1,000 Gallon All-Poly® Series Custom Cab
Pumper Specifications**

March 3rd, 2025

Prepared for: <Fire Department>

<City, State>

Midwest Fire Rep: Stock Custom Cab Pumper

QMS-WIN-022 Rev S

Notes:

Date	Change Order #	Op Number	Description	Rev

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SECTION 1: BOOSTER TANK

1.00 "T" Tank with a Lifetime Warranty from Its Manufacturer

The All-Poly Series features a polypropylene "T" style tank integrated into the body.

"T"-style tank fabricated from non-corrosive, stress-relieved virgin copolymer polypropylene thermoplastic material. All exterior tank joints and seams are extrusion welded. All welds conform to DVS and AWS standards. All joints, seams, and welds tested for integrity and leaks and are certified to be free from defects. The top of the tank is white with a textured finish and is fitted with removable lifting eyes designed with a 3-to-1 safety factor to facilitate easy removal. All joints, seams, and welds will be tested for integrity and are certified to be free from defects and are 100 percent welded inside and out; no skip welding is permitted.

The material thickness will be dependent upon its function. The sides, top and ends will be 3/4" (.75) thick. The baffles and fill tower will be 3/8 to 1/2" (.50) thick. The transverse swash partitions extend approximately 4" off the floor to just under the cover. The longitude swash partitions extend from the floor to the tank through the cover to allow for positive welding and maximum integrity. All partitions are equipped with vent and air holes to permit movement of air and water between compartments. The partitions are designed to provide maximum water flow. All swash partitions interlock with one another and are welded to each other as well to the walls of the tank. This baffling system will be fully compliant with NFPA and the DOT regulations.

There will be a sump located on the bottom of the tank with a 3/4" drain valve at the lowest point. A 3" minimum removable clean out plug is installed at the bottom rear and bottom front of the tank. Tank fill couplings backed with flow deflectors to disperse the stream of water entering the tank, and capable of withstanding sustained fill rates of up to 1,000 G.P.M. at 100 PSI maximum. All auxiliary outlets and inlets must meet NFPA 1900 guidelines in effect at the time of manufacture.

The tank is affixed to the cradle utilizing hat channel mounting brackets constructed of 1/4" thick stainless-steel. The channels are mounted beneath the center of the tank before and after the cross members of the cradle. The channel surrounds these members and is bolted directly to the bottom of the tank thereby securing the tank to the cradle. This mounting system provides a free-floating connection of the tank to the cradle which allows the chassis frame's normal movement and twist to introduce no stress upon the tank or body.

1.00 Tank Size

1.00.02 All-Poly Series 1000 gallon

THE TANK/ BODY WILL CARRY A LIFETIME WARRANTY FROM ITS MANUFACTURER

1.01 Front Fill Tower

Tank has an overhead fill with lid, located in front on street side of tank. Fill tower is constructed of 1/2" polypropylene with minimum dimensions of 16" square. The tower has a 1/4" removable Poly screen and a polypropylene hinged-type cover. Cover has a sealed and latched lid to prevent any water spilling into the hose bed.

An internal overflow system is to be inside in the tank and discharging behind the rear wheels. This allows air to enter the tank when dumping water.

1.07 Integrated Foam Tank

The water tank will have an integrated foam tank designed into the front curb side of the water tank to accommodate the use of the foam system. The foam tank will have a fill tower constructed of 1/2" polypropylene with minimum dimensions of 8" square. The tower has a 1/4" removable Poly screen and a polypropylene hinged-type cover with a vent.

1.07.02 30-gallon

SECTION 2: DIRECT FILLS AND TANK LEVEL

2.02 Tank Level Gauge

- Pressure transducer mounted on the outside of the tank in an easily accessible area. Sealed foam tanks (if so equipped) will require zero pressure vacuum vents.
- Super bright LED display viewable from 180 degrees with a visual indication at multiple accurate levels.
- Weather resistant connectors to connect to the digital display, the pressure transducer, and the apparatus power. Additional displays are easily integrated and will receive data from the same source as the Master Display; no additional transducers required.
- Tank level gauge indicates the liquid level on easy-to-read LED display.

2.02.00.03 Tank level gauges always on.

All tank level gauges will be activated and always on once the Master Switch is engaged.

2.02.08 One (1) Innovative Controls Soft Glo Series Water Tank Level Gauge

2.02.08.01 Installed on the street side pump panel.

2.02.08.01.01 Chrome Bezel

2.02.09 One (1) Innovative Controls Soft Glo Series "A" Foam Tank Level Gauge

2.02.09.01 Installed on the street side pump panel.

2.02.09.01.01 Chrome Bezel

SECTION 5: BODY AND COMPONENTS

Body

- The body will be enclosed on all sides and incorporate closed wheel wells and finished storage compartments.
- Stainless-steel corner guards to protect from damage on road and fire scene.
- Front face surface of body protected with aluminum Tread-brite.

Fenders

- Fenders will be integral with the side of the body.
- Fender wells are constructed with full circular copolymer polypropylene thermoplastic inner liners for ease of cleaning and maintenance.

Materials

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- The entire body is fabricated from non-corrosive, stress-relieved virgin copolymer polypropylene thermoplastic material.
- All exterior body joints and seams are extrusion welded.
- All welds will conform to DVS and AWS standards.
- All joints, seams, and welds will be tested for integrity and are certified to be free from defects.
- All joints and are 100 percent welded inside and out; no skip welding is permitted.

THE BODY WILL CARRY A LIFETIME WARRANTY FROM ITS MANUFACTURER

5.00 Fenderettes

Fenderettes are installed on the wheel wells to prevent splash and enhance appearance. The fenderettes extend approximately 1" beyond the body side and are designed to be replaced. All fasteners will not be exposed to the exterior of the fenderettes or body.

5.00.01 Chrome Fenderettes

5.01 Rub Rail - Aluminum

The bottom edge of the entire apparatus will have an aluminum rub-rail installed including the pump house, and rear step. The rub-rail is replaceable, made from solid extruded aluminum and features a reflective stripe at the rail center.

5.01.01 Red/White Stripe

5.02 Tow Eye

Attached to the rear of the chassis frame is a black powder coated steel support system that provides extra strength to the rear body with integrated tow eyes.

5.03 Cradle

An all-aluminum cradle is engineered and constructed to connect the chassis frame with the copolymer tank and body. The cradle is constructed using extruded aluminum tubing .25" thick and extruded aluminum flats .375" thick. Cradle cross members are spaced to restrict unsupported portions of the tank between cross members to a maximum of 550" squared. There are cushioned rubber extrusions placed over all tank support areas to isolate the tank from the aluminum cradle.

5.07 Full Length Body Layout

This body configuration is based on a 176" overall length of the body:

- Sweep-out style compartments, integral to the body, constructed using white copolymer material.
- Each compartment will have an anodized aluminum roll-up door, door activated LED compartment lights, corrosion resistant vents, black Turtle Tile plastic dry decking, and floor drains.
- Compartment doors will have a sensor tied to the "Do Not Move Apparatus Light" illuminating when it is not fully closed.

5.07.01 Dual High Side Package, Full Body

Both the street and curb side of the apparatus will include:

- One (1) full height locker ahead of the rear wheels.
- One (1) over wheel locker above the rear wheels.
- One (1) full height locker behind the rear wheels, bottom portion will be transverse unless otherwise specified in section 6.02.
- One (1) transverse locker behind the rear wheels.
- One (1) door opening into the rear facing locker from the rear of the apparatus.

SECTION 6: BODY COMPARTMENTS

6.00.06 Hard Suction Hose Compartment Above High Side

Rear upper compartment will have a swing-out door with a latch and vertical hinge. Compartment doors will have a sensor tied to the "Do Not Move Apparatus Light" illuminating when it is not fully closed.

Compartment is built to accept:

- One (1) 6" x 10' hard suction hoses

6.00.06.01 Street Side, (full depth compartments)

6.00.06.02 Curb Side, (full depth compartments)

6.00.08 Ladder Compartment

Ladder storage compartment positioned on the rear of the apparatus. Compartment will have a swing-up door with a handle. Compartment doors will have a sensor tied to the "Do Not Move Apparatus Light" illuminating when it is not fully closed.

Compartment will have dividers to separate ladders and built to accept:

- One (1) 24' two-section ladder
- One (1) 14' roof ladder
- One (1) 10' Attic Ladder
- Two (2) Pike Poles up to 12' long

6.00.08.01 Through tank, above rear facing door

6.02 Compartment Options

6.02.11 Spare Bottle Holders

SCBA spare cylinder doors are in the rear wheel wells. Cylinders held in place with 8" diameter holders with a stainless-steel hinged door with a positive latch. Door includes a seal for increased protection against weather elements. Compartment door(s) will have a sensor tied to the "Do Not Move Apparatus Light" illuminating when it is not fully closed.

6.02.11.01 Single Ahead of Rear Wheels, Street Side

6.02.11.05 Single Ahead of Rear Wheels, Curb Side

6.02.11.08 Single Behind Rear Wheels, Curb Side

SECTION 7: RUNNING BOARDS, CATWALKS, AND REAR STEP

7.00 Running Boards

A 12" wide running board is located at the base of the pump house and is made from embossed aluminum tread plate and includes a replaceable extruded aluminum rub rail.

7.00.01 Polished Tread Brite

7.01 Rear Step

The 12" deep rear step is NFPA compliant and made of embossed aluminum tread plate with a kick plate. Rounded polished aluminum castings installed on the corners of the step.

7.01.01 12" Deep Rear Step

7.01.01.01 Polished Tread Plate

SECTION 8: GRAB RAILS AND FOOTSTEPS

8.00 Grab Rails

The grab rails are made of 1 ¼ " diameter extruded aluminum tubing with knurled finish and stanchion brackets.

8.00.01 Rear Grab Rails.

Grab rail(s) provided at the rear.

8.00.01.06 One (1) vertical grab rail on the rear of the body, Curb Side

8.00.04 Front Grab Rail - Street side

There is one (1) grab rail located on street side of tank in the upper front corner for ease of loading and unloading hose cross lays.

8.00.04.01 Front Grab Rail - Street side

8.00.05 Front Grab Rail - Curb side

There is one (1) grab rail located on curb side of tank in the upper front corner of tank for ease of loading and unloading hose cross lays.

8.00.05.01 Front Grab Rail - Curb side

8.00.12 Rear Upper Horizontal Grab Rails

Horizontal grab rail(s) are provided at the rear on the upper portion of the backside of body for ease of accessing the top of the apparatus. Standard location is on the backside of the rear wall.

8.00.12.01 One (1) Street Side

8.00.12.02 One (1) Curb Side

8.01 Access Steps

As per NFPA 1901 standards, all steps are a minimum of 35" square.

8.01.02 Front Folding Steps - Street side

Large illuminated folding steps are provided at the front on the street side, for access to the catwalk area. The steps are a minimum of 35" square.

8.01.02.04 Chrome Plated, Quantity four (4)

8.01.03 Front Folding Steps - Curb side

Large illuminated folding steps provided at the front on the curb side, for access to the catwalk area. The steps are a minimum of 35" square.

8.01.03.04 Chrome Plated, Quantity four (4)

8.01.07 Hose Bed Folding Steps

Illuminated Folding Access Steps on the side of the transverse access door on the rear of the body.

8.01.07.02 Chrome Plated, Three (3) Steps, Curb Side

8.01.08 Hose Bed Platform

One (1) hose bed access platform provided just below the center rear of the hose bed, for ease of accessing and loading the hose bed.

8.02 Access Ladder

8.02.05 Zico Quic-Ladder™

A Zico 15" QUIC-LADDER™ that swings out & down, to be installed on the rear panel. Cast aluminum rungs have a flat, non-skid surface to provide traction and safety. Each step is 3" deep. Meets NFPA 1901-09 requirements for slip resistance and static load and has a two-rung fold-down section. Handrails are 1-1/4" heavy-walled aluminum tubing, covered in a rough grip black powder coat, which provides a firm gripping surface. The ladder will have a sensor tied to the "Do Not Move Apparatus Light" illuminating when it is not fully stowed.

8.02.05.01 Street Side

8.02.05.03 Ladder Light Assembly

SECTION 9: ELECTRICAL EQUIPMENT

9.00.25 Multiplex Electrical System – OEM Installed

➤ OEM – 45-NS-0350

Midwest Fire will utilize a Controller Area Network (J1939) protocol to provide multiplexed control signals for "real time" operation. The system consists of a main control module and the appropriate combination of additional module(s), Switch Input Module(s), and other I/O modules as required for each apparatus' application.

9.01 DOT Lighting Details

- LED stop/tail, turn, clear LED backup light, and red LED warning light, installed at the rear. Light assemblies provided in chrome plated housing.
- A total of nine (9) LED clearance lights and seven (7) red LED lights installed at the rear.
- Two (2) amber LED lights are installed on the front street and curb sides.
- Reflectors are installed per DOT specifications.
- An illuminated license plate bracket installed at rear.

9.02 Lower-Level Rear Lighting

9.02.01 Quad cluster Taillight Package

Two (2) LED Quad-Cluster combination include: red LED stop/tail, clear LED backup light, amber LED arrow type turn signal, and LED warning light, installed at the rear. Light assemblies provided in a four-light housing.

9.02.01.02 Whelen M6 Series Quad-Cluster, Chrome Bezel

9.02.03 Side Mount Turn Signals

LED side-mounted DOT approved turn signal repeaters, mounted between the rear wheels on the body side to provide visible lateral turn warning.

9.04 Camera System

9.04.25 Rear View Camera – OEM Installed

- OEM – 40-YC-3815
- Midwest Fire will install Camera at the rear of body and hook up to pre-supplied harness.

9.06 Power Distribution Options

9.06.05.25 Duplex Outlet – Shoreline – OEM Installed

- OEM #: 40-Z0-0650

9.06.06.25 12Vdc Power Circuit – OEM Installed

- OEM #: 40-Z0-0005 thru 40-Z0-0415

SECTION 10: EMERGENCY SIREN AND LIGHTING EQUIPMENT

10.00 Apparatus Control Center

All emergency lighting, options, and accessories are controlled at a master control center in the cab.

The apparatus control center:

- Controls all warning lights and scene lights
- Includes a “Do Not Move Apparatus” and other optional indicator lights
- Do Not Move Apparatus Light
 - A red flashing light located in the chassis cab. The light shall be illuminated automatically whenever the vehicles parking brake is not fully engaged and any of the following conditions exist:

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- Any passenger or equipment compartment door is not closed.
 - Any ladder or equipment rack is not in the stowed position.
 - Stabilizer system is not in its stowed position.
 - Powered light tower is not stowed.
 - Includes an audible alarm for open compartment circuit
 - OEM 40-LC-2010
- Any other device permanently attached to the apparatus is open, extended, or deployed in a manner that is likely to cause damage to the apparatus if the apparatus is moved.
 - UV700 Multiplex display
 - Controls other optional functions if equipped. (I.E. Electric Dump Valves, Pump Shift)
 - Mounted Electronics, Sirens, and Radios
 - Features lighted identification plates on a non-glare panel face that clearly identify each switch and its function.
 - Top plate bolted on for maintenance and adding additional items.
 - Control Centers will require that there be no seat in between the driver and passenger seats.

All warning packages are fully NFPA compliant and certified by the lighting component manufacturer to meet all requirements.

10.00.25 Forward Engine Enclosure Control Console

- 10.00.25.01 Control Console – OEM Installed
 - OEM #: 40-X0-1120
- 10.00.25.02 Storage Tray & Cup Holders – OEM Installed
 - OEM #: 40-X0-1200
- 10.00.25.03 USB/USB-C Charging Ports – OEM Installed
 - OEM #: 40-X0-1415

10.01.25 Light Bar – OEM Installed

- OEM – 57-043360

10.02.25 Siren & Speakers – OEM Installed

- OEM – 40-H0-2020
- OEM – 40-HA-2064

10.04.25 Front Lower-Level Flashers – OEM Installed

- OEM – 57-20-3318

10.05.25 Intersection Lights – Custom Cab

- 10.05.25.01 Front Intersection Lights – OEM Installed
 - OEM – 57-30-3314
- 10.05.25.02 Rear Intersection Light, Red, Chrome Bezel, M6 Series LED, (2) Two each side
Rear intersection lights will be mounted 18" above the ground, and no higher than 60". (1) One positioned behind the cab but in front of the rear wheels, and (1) positioned closest to the rear of the truck.

10.06 Upper-Level Rear Warning Lights

10.06.6386 Side/Rear Whelen M Series Upper LED Flashers

Whelen M Series LED Flashers with chrome bezels. The flashers will be the outer/upper most lights (outside or above the scene lights). Lights will have clear lenses.

10.06.6386 Side/Rear Flashers, Red, M9/M6V2 Series LED, Two (2) each side of the tank in the front and rear upper corners, total four (4).

- M6V2 Series LED, Red, two (2) on the rear of apparatus in the upper corners.

- Six (6) total lights with four (4) M9 flashers and two (2) M6V2 combo lights.

10.07 Scene lights

Scene Lights are controlled from the control center located in the chassis cab and a One Touch switch pack located on the pump panel.

10.07.05 Automatic Reverse Scene Wiring

Rear scene lights will be wired to illuminate when chassis is placed in reverse.

10.07.5438 Whelen M9 Effective Zone "EZ" LED Scene Lights, Four (4)

There are four (4) Whelen M9EZ Scene Lights. Two (2) each side of the tank in the front and rear upper corners. (Four (4) Total) Side scene lights only.

Note: rear scene lights are the M9V2 combo lights

10.09.25 Ground Lights

10.09.25.01 Cab Ground Lights – OEM Installed

➤ OEM – 40-G0-1300

10.09.25.02 Rear Ground Lights, (4) Four

(1) each installed on curb and street side, below the pumphouse step, and rear step area. Ground lights will be activated when parking brake is applied.

10.10 Accessory Lights

10.10.25 Step Lighting – OEM Installed

➤ OEM – 40-LD-4010

SECTION 11: PAINTING, LETTERING, STRIPING, AND SIGNS

11.00 Painting process

The entire tank, body, and components will be washed, sanded, prepped for primer, cleaned, and primed with PPG urethane primer filler. The body will be hand sanded and color match painted using a PPG Deltron base coat/clear coat paint. After paint is applied and properly cured the apparatus will be color sanded and buffed to a high gloss. The paint process is approved by PPG.

11.00.01 Color Match Single Tone, Red

11.00.01.01 Color Matched, 750 - 1250 Gallon

10-YEAR WARRANTY ON PAINTED BODY PARTS

11.01 ID plate

There is a permanent plate located in the center top chassis cab with the following information:

Quantity and type of fluids used in the vehicle. This plate includes:

- Engine oil, quantity.
- Engine coolant, quantity.
- Chassis transmission fluid, quantity.
- Pump transmission fluid, quantity.
- Drive axle lubrication fluid, quantity.
- Air conditioning refrigerant, quantity.
- Air conditioning lubrication oil, quantity.
- Power steering fluid, quantity.
- Front and rear cold tire pressure.
- Number of personnel the vehicle is designed to carry located in an area visible to the driver.
- Height and length of the vehicle in feet and inches.
- Gross vehicle weight rating (GVWR) in pounds.

And the following FAMA safety signs installed where applicable:

- A safety sign FAMA07, which warns of the importance of seat belt use, shall be visible from each seat that is intended to be occupied while the vehicle is in motion.
- A safety sign FAMA10, which warns of the need to secure items in the cab, shall be visible inside the cab.
- A safety sign FAMA15, which warns not to wear helmets while the vehicle is in motion, shall be visible from each seat that is intended to be occupied while the vehicle is in motion.
- A safety sign FAMA24, which warns personnel not to ride on the vehicle, shall be located at the rear step areas and at any cross walkways.

11.03 Vinyl Lettering

11.03.01 Provided on the chassis doors, Qty (2):
Front and Rear Doors

11.03.04 Provided on the street and curb side of the tank: <description/pictures>

11.05 Reflective Stripe

The apparatus body and chassis will have reflective stripe on each side and the front per NFPA 1901 standards.

11.05.05 (1x6x1) 6" wide white reflective stripe with a 1" wide white reflective stripe spaced approximately 1/2" above and below. ~~Stripe will be straight on the body and chassis.~~

11.05.05.01 Single Axle

11.05.10 Upward Angled Stripe – upcharge.

The stripe selected above will be installed in an upward 45-degree angled pattern and straight over the rear wheels to the back of the apparatus. This option omits the previous statement “stripe will be straight on the body and chassis”.

11.05.10.01 Single Axle

11.05.25 Reflective Material – Interior Cab Doors

➤ OEM – 40-DE-3050

11.06 Rear Chevron

11.06.10 Diamond Grade Pattern, Chevron 100%, Individual Stripes, 6”

Per NFPA 1901 standards, 100 percent of the rear will include Red and Fluorescent Yellow-Green striping installed with each stripe a minimum of 6” wide. 1/4" black stripe installed between the 6" stripes. Midwest Fire will install individual stripes using NFPA 1901 compliant 3M material.

11.06.09 No Chevron on Rear Door

The chevron will not be applied to the following rear-facing doors:

Rear Roll-Up Door

***ALL OTHER REAR-FACING DOORS NOT MENTIONED WILL HAVE CHEVRON.**

SECTION 12: CORROSION PROTECTION AND MUD FLAPS

12.00 Corrosion Protection

The All-Poly Series body has several features which prevent corrosion.

- All fasteners are stainless-steel where applicable.
- All contacts of dissimilar metals are insulated with 3M products to prevent galvanic corrosion.
- Rub rails are Type II bright dip anodized.
- Tow rings are black powder coated.
- The Poly body material eliminates the need for undercoating and sprayed on coating inside storage lockers.
- The Poly body material is non-corrosive and is frequently used for storing acids.
- The Poly body material eliminates many possibilities of dissimilar metal contact caused by galvanic reaction.

12.01 Mud Flaps

There are two mud flaps installed behind the rear wheels.

- The mud flaps are ¼ inch thick black rubber.
- The bottom of the mud flaps is fitted with chrome weights.
 - If Black out options are selected the chrome weights will be black.

SECTION 13: PUMP AND PLUMBING

13.00 Pump House

- Side Control Pump House

The pump compartment features:

- The superstructure frame is made from .125" wall X 2.00" square type aluminum tubing.
- The front and a portion of the rear of the pump compartment is made from aluminum tread plate sheets to enclose the perimeter of the water pump.
- There will be two (2) horizontal grab rails provided, one on each side, above the pump control panels.
- The street and curb sides of the pump compartment are equipped with side running boards. The running boards extend along the width of the pump compartment from the rear of the chassis cab to the forward end of the body module.
- Pump side panels are covered with black protective material.
- Running boards include extruded aluminum rub rail extending the length of the running boards.
- The step surfaces comply to applicable sections of NFPA 1901 requirements.
- A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator's panel.
- A rubber pump compartment seal provided between the rear of the pumphouse and the body.
- There will be a hazard switch wired to the "Do Not Move Apparatus" light if the hinged pump house access doors are not closed.

13.04 Split-Shaft Mounted Pump

Split-Shaft Pumps utilize a split drive gear box to power the pump from the apparatus transmission. They have many features in common with PTO driven pumps.

- Split-Shaft mounted pumps are for stationary pumping only.
- Helical design and precision-cut gears to reduce noise and minimize wear
- Double seal ring design solid bronze impeller
- Stainless-steel pump shaft
- Maintenance free mechanical seal
- The street and curb side pump panels and access doors are constructed entirely of aluminum and be covered with black protective material.
- The pump compartment has full width vertically hinged access doors located on the upper portion of the street and curb side pump compartment.
- A latch is furnished to hold the doors closed and have a retainer attached to prevent over extension of the opened door.
- The pump operator panels are to be completely "bolted" or hinged in place for ease of removal.

- A full panel width LED light hood is provided to illuminate the street and curb side pump panels. A service light is provided to illuminate the interior of the pump compartment. Lights are controlled by the operator's panel light switch.
- 2 1/2" 400# liquid filled stainless-steel individual discharge pressure gauges and control handles.
- One 3 1/2" Master discharge gauge and One 3 1/2" Master Pump intake gauge.
- Color-coded pump panel identification labels are provided for all gauges, controls, connections, switches, inlets, and outlets.
- Pump shift is electric operated and incorporates standard automotive shifting mechanism for ease of maintenance. The pump shift switch is mounted in the cab and identified as "Pump Engagement". The pump shift assembly includes an indicating light to show when the pump has been engaged.
- The apparatus will have a "Pump Engaged" and "OK to Pump" indicator in the driver compartment.
- A test plate shall be provided at the pump operator's panel that gives the rated discharges and pressures together with the speed of the engine as determined by the certification test for each unit, the position of the parallel/series pump as used, and the governed speed of the engine as stated by the engine manufacturer on a certified brake horsepower curve.
- The test label shall be completely stamped with all information at the factory and attached to the vehicle prior to shipping.
- Master pump manifold type drain valve are provided with all pump drains connected to it and operate from the pump operators panel, so the entire pump system may be drained by a single control.
- All discharges and pre-connects with a 1 1/2" or larger valve, per NFPA 1901 standards, shall have drains or bleeder valves, having a minimum 3/4" pipe thread connection, for bleeding off pressure from the hose connection to the outlet.
- Overheat pump protection system.
- 2 1/2" auxiliary suction lines, regardless of size, are gated with an Elkhart Unibody swing out quarter turn self-locking ball valve with chrome plated swivel adapter.
- Per NFPA 1901 standards there shall be pump system test ports mounted on the pump panel.
- The pump will have at minimum of two (2) sacrificial anodes included.

13.04.08 Waterous CS Series 1500 Split-Shaft Pump

All the plumbing and/or piping in the pump compartment will be constructed of 304 stainless-steel or flexible piping for long life. All NPT pipe thread connections larger than 3/4" connections are avoided in the construction of the plumbing system. The following valves shall have groove connection: rear discharge, tank fill, all 2" and 2-1/2" pre-connect valves.

Pump Ratings:

1500 GPM @ 150 PSI

1150 GPM @ 200 PSI

750 GPM @ 250 PSI

13.04.20 Split-Shaft Auto Governor Options

13.04.20.06 Fire Research "Pump Boss Max Auto Governor"

- Features:
 - Large, impact resistant 3.5" LCD screen, high resolution display, high visibility under sunlight
 - No pressure or RPM variation when changing modes
 - Always starts in Pressure Mode at idle RPM
 - Displays and LEDs intensity automatically adjusts for day or night operation
 - Check Engine, Stop Engine, Warning and Alarm icons on display
 - Message bar displays error or warning information
 - Recognition of no water condition with automatic response
 - Limits increase of pressure when in RPM mode
 - Overheat pump protection system
 - Programmable preset settings

13.05 Primer Pump Options

13.05.02 Trident Primer Pump, Manual

The Trident Air Primer is a pneumatically operated, oil-less primer system. The priming system has a 3-barrel, bronze construction, has no moving parts, and is NFPA Compliant. It uses compressed air supplied from the chassis. Primer is actuated via push button. Extra engagement switches are actuated with just a push button.

13.05.02.02 Primer to Pump

13.06 Suction Intakes

On all pumps, an intake suction relief shall be provided per NFPA 1901 standards. It will be terminated with a 2 ½" NST male adapter.

13.06.01 2 ½" Gated Intakes

Each intake consists of a 2 ½ " NST female chrome plated swivel intake located on the pump panel. The intake has a 2 ½ " valve, swivel adapter with screen, chrome plated plug and chain.

13.06.01.01 One (1) intake, street side

13.06.01.02 One (1) intake, curb side

13.06.02 Non-Gated Master Intakes

Master intakes are plumbed out both sides of the pump house and capped with a chrome long handled cap.

13.06.02.08 Two (2) 6" intakes, Cast Iron Pump

13.07 Discharges

Discharges include:

- Tee Handle Control
- 2 ½" 400 PSI Liquid Filled Stainless Pressure Gauge
- 30 Degree Elbow, cap, and chain

- 13.07.01 Side Control Pump Panel Discharges
 - 13.07.01.02 Two (2) 2 ½" Discharge, Street Side
 - 13.07.01.03 One (1) 2 ½" Discharge, Curb Side
 - 13.07.01.05 One (1) 3" Discharge, Curb Side, Slow Close, Straight, Omits 30-Degree Elbow

- 13.07.03 Side Control Pump, Rear Discharge, Curb Side
 - If selected, a 2 ½" Cross lay is not available.
 - 13.07.03.04 One (1) 2 ½" Discharge, Through Tank, Terminated High

- 13.07.05 Side Control Pump, Front Discharge
 - 13.07.05.02 One 2 ½" Discharge, Curb Side

- 13.07.50 Installed Discharge Adapters
 - Must select an above discharge. Note the exact discharge operation number.
 - 13.07.50.07 3" NSTF swivel rocker lug x 5" Storz lock and Cap, 30-Degree Elbow Installed on 13.07.01.05

13.08.08 Plumbing for Deck Gun

- 13.08.08.01 Deck Gun Port
 - Port left accessible for future install of deck gun plumbing. A gauge, valve, and handle are not provided.

13.09 Tank Fill/ Tank to Pump

- 13.09.01 Tank Fill Valve 2"
 - A 2" tank fill/pump re-circulating line provided from the pump to the water tank, with a 2" valve and 2" high-pressure flexible hose.
 - 13.09.01.01 2" Tank Fill Valve, Side Control
- 13.09.03 Tank to Pump 3"
 - A 3" tank to pump line provided from the water tank to the pump, with a 3" valve and tee handle controls, and 4" plumbing with flexible connection with check valve.
 - 13.09.03.01 Manual Controls, Side Control

13.10 Foam System

- 13.10.01 Foam Pro 1600
 - A Foam Pro, Model #1600, Class "A" foam system plumbed to crosslay and curb side rear discharges if applicable. Foam system has a tank with low tank sensor, pumps assembly, foam injection check valve, main line check valve, flow meter, and control module with instructions. Control module to be mounted on street side pump panel. Integral tank is designed into the front curb side of the tank.

FOAM WILL BE PLUMBED TO THE FOLLOWING THREE (3) DISCHARGES:

- Crosslay #1 (1.5")

- Crosslay #2 (1.5")
- Front 2 ½" Discharge

13.11 Pump House Heat Control

13.11.08 Pump Bypass Cooler Line

A 3/8" pump bypass cooler line shall be installed to manually protect the pump from overheating. The control for the cooler line shall be located on the pump operator's panel and have a quarter turn valve.

13.12 Pump Certification

13.12.02 Third Party Calibration

The pump test shall be witnessed and certified third party by Underwriters Laboratory.

SECTION 14: HOSE TRAYS, PRE-CONNECTS AND CROSS LAYS

14.08 Hose Cross-Lay

- The hose cross-lay provides an area for pre-connected hose cross-lays and/or hose storage.
- The cross-lay is constructed of a 1" thick polypropylene/polyethylene floor designed to provide drainage and ventilation to the cross lay area.
- Front and rear are constructed of 1/8" aluminum.

14.08.01 Hose cross lay above Side Control Pump

14.09 Pre-connected Cross-Lays

- Cross lay is pre-connected via NST swivel male gated with a ball valve.
- Pre-connect has a 2 ½ " 400psi liquid filled stainless-steel individual pressure gauge and control handle.

14.09.02 Two (2) 1 ½ " NST male pre-connects, 2" valve

14.10 Cross-Lay Options

14.10.01 Cross Lay Divider

Hose cross-lay is equipped with adjustable divider constructed of 3/16" aluminum.

14.10.01.02 Two (2) Cross Lay Dividers

14.10.04 Cross Lay Vinyl Cover

Heavy-duty flame-retardant vinyl cover with mesh ends is supplied and custom fitted to the apparatus cross lay. The cover is attached with shock cord to retain the cover during travel as required by NFPA.

14.10.04.01 Black Cross lay Cover

14.11 Hose bed

14.11.00 Hose Bed

Hose bed runs the full length and width of the tank. The floor of the hose bed is grooved to allow the loaded hose to drain and provide ventilation. The floor is fabricated from UV stable

white polypropylene with inverted T slot are machined into the floor at three points to accommodate adjustable hose dividers.

14.11.00.04 16" Tall Hose Bed Walls

14.11.01 Hose Bed Divider

The hose bed has an adjustable divider made from copolymer. The rear of the divider will have slot cut in that can be used for a hand grip.

14.11.01.01 One (1) divider

14.11.01.10 Front Fill Tower Divider, Full Width

One (1) single fill tower divider will separate the hose bed from the fill tower and dunnage area. It will extend the full width of the hose bed (street side to curb side). One drain supplied near fill tower. No other dividers in this area. Hose bed cover will not cover this area.

14.11.02 Hose Bed cover

Heavy-duty vinyl hose bed cover is custom fitted to the apparatus hose bed. The cover is attached across the front of the hose bed with a rail and bead system to prevent wind from getting under the cover, with a flap to cover the back of the hose bed and has a quick release elastic rope to retain the hose in the bed during travel as required by NFPA. Operating temperature is -40F to 180F.

14.11.02.01 Black Hose Bed Cover, Full Body

14.11.05 Hose Bed Lighting

Four (4) 12" LED lights mounted in the hose bed, one (1) in each corner. Lights will only be activated when parking brake is applied.

SECTION 17: CHASSIS ACCESSORIES

17.01.25 Hub & Lug Nuts – OEM Installed

- OEM – 10-X0-0300

17.04.25 Kussmaul – OEM Installed

- OEM – 45-T0-0665
- OEM – 09-X0-0900

17.08.25 Air Horns – OEM Installed

- OEM – 40-H0-1113

17.09.25 Extended Front Bumper – OEM Installed

- OEM – 01-V3-0010

17.10 Accessories

17.10.01.25 Tire Pressure Monitoring – OEM Installed

- OEM – 10-GW-0122

17.10.04 Heat Exchanger

A Heat exchanger permits the use of water from the pump to cool the engine. Cooling is done without mixing the engine antifreeze and the pump water.

17.10.04.6115 Heat Exchanger OEM Installed

17.10.06.25 SCBA Seats – OEM Installed

- OEM – 40-RW-1020
- OEM – 40-RW-1030
- OEM – 40-RW-1060
- OEM – 40-RW-1080
- OEM – 40-RW-1090

17.10.16.25 Chassis Engine Brakes – OEM Installed

- 13-N0-0210

17.11.25 Chassis Exhaust – OEM Specified

- 13-Y0-0621

SECTION 18: LOOSE EQUIPMENT

Loose equipment required by NFPA not listed will be supplied by customer after delivery of the apparatus prior to being put in service.

18.00.01 Aluminum Roof Ladder

18.00.01.03 One (1) 14'

18.01.01 Aluminum Two-Section Extension Ladder

18.01.01.03 One (1) 24'

18.03.01 Aluminum Folding Attic Ladder

18.03.01.01 One (1) 10'

18.04 Flamefighter Firefighting Tools

18.04.02 One (1) 8' pike pole

18.04.03 One (1) 10' pike pole

18.08 Wheel Chocks

18.08.04 Two (2) Cast Aluminum Wheel Chocks, with holders, installed underneath street side front locker.

18.10 PVC flexible hard suction hoses

18.10.11 6" x 10', Qty (2)

18.19.25 Road Safety Kit – OEM Supplied

SECTION 19: CHASSIS

19.25 HME Custom Cab per specification attached. Brief summary below:

Chassis Summary			
Manufacturer	HME 1871	Cab Type (Reg, Ext, Crew)	6-Man Cab
Model	MFDXL	Cab to Axle (in.)	138"
Engine Manufacturer	Cummins	Wheelbase (in.)	198"
Engine Model	L9	Front Axle Rating (Lbs.)	19,000 lbs.
Horsepower	450	Rear Axle Rating (Lbs.)	31,000 lbs.
Transmission Make	Allison	Paint Color Code	L0762EY MED RED ELITE EY
Transmission Model	3000 EVS Automatic	Two-Tone Scheme	NA
LED Headlights	Yes	Auxiliary Brake	See 17.10.16
Electric Windows	Yes	Rear Differential Locks	Single Full
Electric Locks	Yes	Air Brake System	Disc Brakes on Front, Drum Brakes Rear
Foot Pedal MPH	68 mph	Cruise Control MPH	68 mph

SECTION 30: RESTRICTIONS

30.01 Maximum Height

30.01.01 No Restrictions. Estimate: 9 ft 8 in

30.02 Maximum Length

30.02.01 No Restrictions. Estimate: 32 ft 5 in

FINAL INSPECTION

The department will take physical possession of the truck and will receive all training on the operation of the truck at the Midwest Fire facility in Luverne, Minnesota during the final inspection/ delivery day.

DELIVERY

Transportation of the apparatus post final inspection is the responsibility of the department.