



# MIDWEST FIRE®

## PTX 3000 Tanker-Pumper Specifications

Prepared for:

**Stock Unit #2142**

Date: 03/24/10

901 Commerce Road  
Luverne, MN 56156  
1-800-344-2059

Initial: \_\_\_\_\_  
Date: \_\_\_\_\_

**PTX Series**  
**3000-Gallon POLY-Elliptical Tanker-Pumper®**  
**Specifications**

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# STANDARD

## Section 1: Booster Tank

1.00

The 3000 gallon tank shall be elliptical in design and constructed of polypropylene sheet stock. This material shall be non-corrosive, stress relieved thermoplastic, and U.V. stabilized for maximum protection. The tank shall be of a special configuration and is so designed to be completely independent of the body and compartments. All exterior tank joints and seams shall feature extrusion welding and all joints shall be tested for maximum strength and integrity. The top of the tank is fitted with removable lifting eyes designed with a 3 to 1 safety factor to facilitate easy removal.

### **The Tank Shall Carry a Lifetime Warranty from Its Manufacturer**

1.01

The transverse and longitudinal swash partitions shall be manufactured of polypropylene material. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow and meet NFPA rules. All swash partitions interlock with one another and are welded to each other as well as to the walls and floor of the tank.

1.02

The tank shall have a combination vent and fill tower. The fill tower shall be constructed of 3/8" thick Poly and shall be a minimum dimension of 8"x 8" outer perimeter. The tower shall be located just to the rear of center of the tank, and centered left & right. The tower shall have a 1/4" thick removable Poly screen and a polypropylene hinged-type cover. Inside the fill tower, there shall be a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 pipe with a minimum I.D. of 4" that is designed to run through the tank, and shall be piped behind the rear wheels so as to maximize traction.

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1.03

The tank cover shall be constructed of recessed and mechanically locked 1/2" thick black polypropylene, stress relieved, U.V. stabilized material. A minimum of two lifting dowels shall be drilled and tapped 1/2" x 2" to accommodate the lifting eyes.

1.04

There shall be one (1) sump per tank. The sump shall be constructed of black polypropylene. The sump shall have a minimum 3" FNPT threaded outlet on the bottom for a drain plug. This shall be used as a combination cleanout and drain. All tanks shall have an anti-swirl plate located approximately 2 1/2" above the dip tube.

1.05

There will be two (2) standard tank outlets: one for tank to pump suction line at which shall be a minimum of 2 1/2" FNPT coupling; and one for a tank fill line which shall be a minimum of 1 1/2" FNPT coupling. 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 of up to 1,000 G.P.M at 100 PSI. All auxiliary outlets and inlets must meet N.F.P.A. 1900 guidelines in effect at the time of manufacture.

1.06

Unless otherwise specified, the tank shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area.

1.07

The tank shall be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of 1/4" x 2" and a minimum Rockwell hardness of 60 durometer. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both, front and rear as well as side to side to prevent tank from shifting during vehicle operation.

1.08

Although the tank is designed as a free-floating suspension unit, it is required that the tank have adequate hold down restraints to minimize movement during vehicle operation.

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1.09.2

An aluminum access ladder, featuring 1-1/4" diameter knurled tube rails and serrated rungs, shall be located at the rear of tank for over-head tank filling.

**Section 2:            Booster Tank Piping, Fills, & Gauges**

2.00

Flanges, there shall be one (1) 2 1/2" NPT tank flange opening and plug located under the tank.

2.01

Direct fill, one (1) 2 1/2" direct fill with NST female swivel fitting, and gated with a 2 1/2" Akron Full-Flow swing out valve shall be provided at the rear of the apparatus and on the left side of the rear dump valve. The direct fill shall be equipped with a 2-1/2" chrome plated plug holder, plug, and chain.

2.01.4

2 1/2" 30-degree elbow, direct fill shall be equipped with a chrome plated 2 1/2" NST female swivel, 30-degree elbow fitting.

2.10.2

One (1) Innovative Controls, SL Series 14 LED light tank level gauge will monitor the water tank level and be located on the driver's side pump panel. The tank level gauge shall indicate the water level on an easy to read LED display and show increments of 1/8 of a tank.

2.11

Spanner and hydrant wrenches, there shall be one (1) adjustable hydrant wrench, two (2) spanner wrenches, and holder installed per customer instructions.

**Section 3:            Dump Valves & Chutes**

3.00

Rear dump valve, one (1) Newton 10" square Kwick-Dump valve, model 1050 shall be provided at the rear center of the tank and painted the exterior color of the apparatus. The rear dump valve shall be equipped with a 10" stainless steel flip chute.

3.04

Side dump valve, one (1) Newton 10" square Kwick-Dump valve, model 1065 shall be provided at the rear driver's side of the apparatus.

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For improved water flow, the dump valve shall be attached directly to the tank and not by the use of a rear manifold system. The side dump valve shall be equipped with a Newton 36" telescoping chute, model 4036, and painted the exterior color of the apparatus.

3.07

Side dump valve, one (1) Newton 10" square Kwick-Dump valve, model 1060 shall be provided at the rear passenger's side of the apparatus. For improved water flow, the dump valve shall be attached directly to the tank and not by the use of a rear manifold system. The side dump valve shall be equipped with a Newton 36" telescoping chute, model 4036, and painted the exterior color of the apparatus.

#### **Section 4: Portable Tank Carrier**

4.01

Tip-down portable tank carrier, one (1) tip-down portable tank carrier for loading/unloading of a folding water tank shall be located on the passenger's side and above the catwalk. The tank carrier shall be designed to fold down over the body side. When in the up position the tank carrier shall be secured with heavy duty locking DeStatco latches. The tank carrier shall be made of 1 1/4" 14-gauge stainless steel square tubing. The tank carrier shall be large enough to hold at least a 3000-gallon size folding water tank. To help keep the wind from entering the folding water tank when in the traveling position, there shall be a wind deflector shield made of 1/8" polished aluminum Tread-Brite installed on front of the portable tank carrier. There shall be one (1) vertical grab rail installed on front of the portable tank carrier. The grab rail shall be made of 1 1/4" diameter extruded aluminum tubing with ribbed rubber inserts and chrome plated stanchion brackets.

4.02.1.99

Portable tank, there shall be one (1) 3000-gallon red portable tank and aluminum frame supplied, model Husky. Liner to be made of 23 oz. durable nylon coated material sides and 28 oz. bottom. There shall be 5 lift handles provided on the bottom of the liner.

#### **Section 5: Apparatus Body and Components**

5.00

The entire apparatus body shall be constructed of 12 and 14-gauge galvanized steel. The apparatus body and the water tank shall be

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removable as two separate units. The first unit shall consist of the tank and the second unit shall consist of the apparatus body and the cradle.

### **10-YEAR WARRANTY ON PAINTED BODY PARTS**

5.01

Fenders shall be integral with the side of the body. Fender wells shall be constructed with full circular inner liners for ease of cleaning and maintenance.

5.02

There shall be bright polished aluminum fenderettes installed on the wheel wells to prevent splash and to give the body a pleasing appearance. The fenderettes shall extend approximately 1" beyond the body side. The fasteners shall not be exposed to the exterior of the fenderettes.

5.03

The bottom edge of the entire apparatus shall have an extruded aluminum rub-rail installed to give the body a pleasing appearance.

5.04.1

Tow eye, there shall be one (1) tow eye located above rear step and attached directly to the frame on the right side of the rear dump valve.

### **Section 6: Apparatus Body Compartments**

6.00

Compartment, one (1) "sweep out" style compartment shall be provided on the driver's side and ahead of the rear wheels. The compartment shall have approximated inside dimensions of <61"> wide by 34" tall by 27" deep. The compartment shall have a <49"> ROM Roll-o-matic anodized aluminum roll up door, two (2) door activated compartment lights, two (2) stainless steel louvered vents, black Turtle Tile plastic dry decking, and floor drains. The interior of the compartment shall be sprayed with grey Speedliner bed coating and spatter painted the exterior color of the apparatus.

6.01

Compartment, one (1) "sweep out" style compartment shall be provided on the passenger's side and ahead of the rear wheels. The compartment shall have approximated inside dimensions of <61">

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wide by 34" tall by 27" deep. The compartment shall have a <49"> ROM Roll-o-matic anodized aluminum roll up door, two (2) door activated compartment lights, two (2) stainless steel louvered vents, black Turtle Tile plastic dry decking, and floor drains. The interior of the compartment shall be sprayed with grey Speedliner bed coating and spatter painted the exterior color of the apparatus.

**Section 7: Running Boards, Catwalks, & Rear Step**

7.01

The catwalks shall be located above the left and right compartments. The Catwalks shall be made of polished aluminum Tread-Brite and bent at a 30-degree angle to provide a drip rail.

7.02

For a safer walking surface, the rear step shall be NFPA compliant and made of Diamondback® deck plate. The outside edge of the rear step shall have a 3" by 1" polished extruded aluminum rub-rail installed to give the step a pleasing appearance. The rear step shall be 12" deep with a 4" tall "kick" plate.

**Section 8: Grab Rails & Foot Steps**

8.00

Grab rails, there shall be two (2) 20" vertical grab rails provided at rear of tank, one each side. The grab rails shall be made of 1 1/4" diameter extruded aluminum tubing with knurled finish and chrome plated stanchion brackets.

8.00.2

Grab rails, there shall be two (2) horizontal grab rails provided one on each side, above the pump control panels, and below the cross lays for ease of loading and unloading the hose cross lay. The grab rails shall be made of 1 1/4" diameter extruded aluminum tubing with knurled finish and chrome plated stanchion brackets.

8.00.3

Grab rail, there shall be one (1) horizontal grab rail provided on the upper front, drivers side of the tank for ease of loading and unloading hose cross lays. The grab rails shall be made of 1 1/4" diameter extruded aluminum tubing with knurled finish and chrome plated stanchion brackets.

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8.00.4

Grab rail, there shall be one (1) horizontal grab rail provided on the upper front, passenger side of the tank for ease of loading and unloading hose cross lays. The grab rails shall be made of 1 1/4" diameter extruded aluminum tubing with knurled finish and chrome plated stanchion brackets.

8.01

Foot steps, there shall be two (2) large chrome plated folding steps with a minimum of 35" square of surface and polished stainless steel kick-plates provided at rear of body, one (1) each side, for access to the catwalk area.

8.01.1

Foot steps, there shall be two (2) large chrome plated steps with a minimum of 35" square and polished stainless steel kick-plates provided at front of body on left & right, for access to the catwalk area.

## **Section 9: Electrical Equipment**

9.00

Battery master switch, a single "on/off" position master battery switch shall be mounted in the cab. When in the off position, all electrical power to the apparatus shall be disconnected. There shall be a green pilot light, visible to the driver, which illuminates when the master switch is activated.

9.00.1

The body and chassis shall be wired as independent modules and connected as a completed unit at the final assembly via electrical connectors located in the electrical compartment. Seals shall be provided on each individual wire and the assembly as a whole. All wiring for the apparatus body shall be within a temperature resistance harness. All wires in each harness shall be color-coded. Wiring shall be run along structural rails and tied in a neat and orderly manner.

9.00.2

The electrical junction box for all apparatus connections, relays, circuit breakers, etc., will be located in the face of the forward passenger side compartment. It shall be of polished aluminum Tread-Brite construction with an aluminum hinge. The apparatus circuits requiring load protection shall utilize sealed relays and automatic reset circuit breakers.

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9.01.2

LED Clearance lights with stainless steel guards, there shall be a total of nine (9), seven (7) red LED lights installed at the rear of the apparatus, and two (2) amber LED lights installed on the front left and right of the apparatus.

9.02

Reflectors shall be installed per Department Of Transportation specifications.

9.03.2.99

Two (2) Code 3 PKG3 Series, LED Quad-Cluster combination red LED stop/tail, clear halogen backup light, amber LED arrow type turn signal, and red LED warning light assemblies shall be supplied and installed on the rear of the apparatus. Individual lights shall measure 7" wide by 3" tall. Light assemblies shall be provided in chrome plated housing. Each light assembly shall be installed using a gasket between the housing and body.

9.06

Compartment "door ajar" warning light, there shall be a "red" pilot light that is visible to the driver and it shall illuminate when a compartment door is open.

9.08

Illuminated license plate bracket, there shall be one (1) illuminated license plate bracket installed at rear of the apparatus.

9.09

Step lights, there shall be a step light installed above each folding foot step.

**Section 10: Emergency Siren & Lighting Equipment**

10.00

Control Center, all accessory and emergency lighting shall be controlled at a master control center in the cab. The control center shall contain lighted rocker switches and shall be heavy duty rated to service the maximum imposed electrical load. The control center shall have lighted identification plates on a non-glare panel face that clearly identify each switch and its function. The control center shall control all warning lights, scene lights, and include the "Master On" and "Open Door" indicator lights.

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10.01.3

Light bar, the upper level warning package shall be fully NFPA compliant and shall be certified by the lighting component manufacture to meet all requirements. The front and front side zones shall be covered by one (1) Whelen model JE2NFPA Justice Series, Super-LED low-profile 56" light bar mounted on the cab roof. The light bar shall have four (4) linear corner modules with nine (9) Super-LED light heads per module, and six (6) CON3 modules with three (3) CON3 Super-LED light heads per module. Activation of the light bar shall be via the control center located in the cab.

10.02

Siren, one (1) Code 3, model 3692 V-Con, siren control head shall be mounted in the chassis cab in a location convenient to the driver. The siren control head shall have electronic air horn, public address mode, wired noise canceling microphone and contain electronic siren tones of wail, yelp, and hi-lo. The siren control head shall be lighted for easy night operation.

10.03

Speaker, one (1) Cast Products 100-watt polished aluminum siren speaker shall be mounted below the chassis front bumper.

10.04.3.99

LED Flashing lights, the lower level warning package shall be fully NFPA compliant. The front zone shall be covered by two (2) Code 3 Prizm Series, flush mounted red LED flashers with chrome plated bezels. These lights shall be 7" wide by 3" tall and be mounted at the front of the chassis. The rear zone shall be covered by two (2), Code 3 Series, flush mounted red LED flashers. These lights shall be 7" wide by 3" tall and be mounted on the rear Whelen model 600 Series, Quad-Cluster combination red stop/tail, clear backup light, and amber arrow type turn signal assemblies.

10.05

Rotators, the upper level warning package shall be fully NFPA compliant and shall be certified by the lighting component manufacture to meet all requirements. The rear and rear side zones shall be covered by two (2) Code 3 model 550, 50-watt halogen fast rotators with red lenses. The two (2) rotators shall be positioned at the rear corners of the apparatus. Activation of the rotators shall be via the control center located in the cab.

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10.06.3.99

LED Intersection lights, the lower level warning package shall be fully NFPA compliant and shall be certified by the lighting component manufacture to meet all requirements. Two (2) Code 3 Prizm Series, red LED flashers shall cover each of the side zones. These lights shall have approximate dimensions of 7" wide by 3" tall, one of the lights shall be mounted at the rear of the body, and one shall be mounted on the front corner of the chassis for use as an intersection style light.

10.07.7

Front scene lights, there shall be two (2) Whelen model 810 Series, halogen internal optic scene lights mounted one (1) on the front driver's side, and one (1) on the front passenger's side of tank. These lights shall have approximate dimensions of 8" high by 10" wide. The lights shall be controlled from individual switches on the control center located in the chassis cab.

10.07.8

Rear scene lights, there shall be a total of four (4) scene lights. There shall be two (2) Whelen model 810 Series, internal optic scene lights mounted one (1) on the rear driver's side, and one (1) on the rear passenger's side. These lights shall have approximate dimensions of 8" high by 10" wide. There shall also be two (2) Whelen model 508 Series, internal optic scene lights mounted facing toward the rear of the apparatus. These lights shall have approximate dimensions of 5" high by 8 5/8" wide. The lights shall be controlled from individual switches on the control center located in the chassis cab.

10.08

Backup alarm, there shall be a backup alarm installed. Alarm shall be energized automatically when the chassis is placed into reverse.

10.09

Ground lights, there shall be four (4) ground lights installed to illuminate the area below the apparatus. Two (2) lights shall be installed below left and right front body, and two (2) lights shall be installed below left and right rear step area. Grounds lights shall be activated when parking brake is applied.

**Section 11: Painting, Lettering, Striping, and Signs**

11.00

All components shall be back-primed prior to assembly.

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11.01

The entire tank, body, and components will be sanded, cleaned, etched with PPG DX1787 and primed with PPG NCP270 direct to metal primer filler.

11.02

The apparatus body will be hand sanded and be painted one (1) color with PPG Deltron base coat/clear coat paint to match the chassis paint color. A two (2) ounce container of touch-up paint, with applicator brush, shall be supplied for each color of the finished apparatus body paint upon completion of the apparatus.

11.03

Compartments, the interior of the compartments shall be sprayed with grey Speedliner bed coating and spatter painted the exterior color of the apparatus.

11.04

Striping and decals, 1/2" wide gold leaf vinyl striping with a top and bottom 1/8" black border, and graphic corner decals shall be installed where applicable on the chassis and apparatus to give it a pleasing appearance. Clear protective vinyl shall be installed on all gold leaf vinyl striping and corner decals.

11.05

Gold leaf vinyl lettering with a black back shadow shall be provided on the chassis doors per customer instructions. Clear protective vinyl shall be installed on all gold leaf vinyl lettering.

11.05.2

Gold leaf vinyl lettering with a black back shadow shall be provided for the customer unit number on the left and right chassis fenders. Clear protective vinyl shall be installed on all gold leaf vinyl lettering.

11.06.1

White reflective striping, the body and chassis shall have a 4" wide white reflective stripe with a 1" wide white reflective stripe spaced 1/2" above and below it on each side and front of the apparatus per NFPA 1901 standards.

11.06.2

Retro-reflective material, per NFPA 1901 standards any door of the apparatus designed to allow persons that allows persons to enter or exit the apparatus shall have a minimum chassis doors shall

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have a minimum of 96 square inches of retro-reflective material affixed to the inside of the door.

11.07

Per NFPA 1901 standards, 50 percent of the rear of the apparatus shall include red and yellow Chevron retro-reflective striping a minimum of 6" wide.

11.20

There shall be a permanent plate located in the chassis cab with the following information:

- Quantity and type of fluids used in the vehicle. This plate shall include engine oil, engine coolant, chassis transmission fluid, pump transmission fluid, drive axle lubrication fluid, air conditioning refrigerant, air conditioning lubrication oil, and power steering fluid.
- Front and rear cold tire pressures.
  
- Number of personnel the vehicle is designed to carry shall be 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

## **Section 12: Rust Proofing & Mud Flaps**

12.00

Corrosion protection, to protect from corrosion, the cradle, underside of the body, and all exposed inner surfaces of the body will be coated with Durethane® 2-part urethane Mastic. To further protect the wheel area, the wheel well liners will be coated with Speedliner® truck bed liner.

12.01

All fasteners used in securing components on or to the body shall be stainless steel.

12.02

Mud flaps, there shall be two (2) mud flaps installed on rear of apparatus behind the rear wheels.

## **Section 13: Pump & Plumbing**

**13.14**

The pump shall be a Darley, model LSP 1000, single-stage construction, PTO driven pump, and shall comply with all

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applicable requirements of the latest standards for automotive fire apparatus of the National Fire Protection Association and shall have a rated capacity of 1000 GPM. Pump features include helical design and precision-cut gears to reduce noise and minimize wear, double seal ring design solid bronze impeller, stainless steel pump shaft and maintenance free mechanical seal.

Pump Ratings: 1000 GPM @ 150 PSI  
700 GPM @ 200 PSI  
500 GPM @ 250 PSI

#### 13.14.1

Pump compartment, the pump compartment superstructure frame shall be fabricated from .125" wall X 2.00" square type 304 brushed 4B finish stainless steel tubing. The front and rear of the pump compartment shall have type 304 brushed 4B finish stainless steel sheets to enclose the perimeter of the water pump. The street and curb sides of the pump compartment shall be equipped with side running boards. The running boards shall extend along the width of the pump compartment from the rear of the chassis cab to the forward end of the body module with extruded aluminum rub rail extending the length of the running boards. The running boards shall be constructed of Diamondback® deck plate. The step surfaces shall be in compliance to applicable sections of NFPA 1901 requirements.

#### 13.14.2

The curb and street side pump panels and access doors shall be constructed entirely of aluminum and be covered with black protective material. The pump compartment shall have full width vertically hinged access doors located on the upper portion of the curb and street side pump compartment. A "lift & turn" type latch shall be 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 shall be provided to illuminate the curb and street side pump panels. A service light shall be provided to illuminate the interior of the pump compartment. Lights shall be controlled by the operator's panel light switch.

#### 13.14.3

Gauges, the pump operator's panel shall include:

a. (1) Fire Research "In Control Auto Governor"

**Features:**

- \*Discharge pressure in PSI.
- \*Pump adjustment back idle.

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\*Engine monitoring of oil pressure, water temperature, battery voltage, and engine RPM.

\*Preset function for instant and reliable operation.

\*Overheat pump protection system.

b. (4) Discharge, "Innovative Controls" 2 1/2" 400# liquid filled stainless steel pressure gauges and control handles.

#### 13.14.4

Color-coded pump panel identification labels shall be provided for all gauges, controls, connections, switches, inlets, and outlets.

#### 13.14.5

Pump shift shall be electric operated and shall incorporate standard automotive shifting mechanism for ease of maintenance. The pump shift switch shall be mounted in the cab and identified as "PTO Engagement". The pump shift assembly shall include an indicating light to show when the PTO has been engaged.

#### 13.14.7

The primer shall be a 12-volt electric, positive displacement, rotary vane type, oil-less primer for 20' to 30' suction lifts. Priming system includes a bronze push-pull valve with electric switch.

#### 13.14.9

Master pump drain, a manifold type drain valve shall be provided with all pump drains connected to it and operate from the pump operators panel so the entire pump system may be drained by one single control.

#### 13.14.9.1

Individual discharge drains, per NFPA 1901 standards all discharges and pre-connects 1 1/2" or larger 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.

#### 13.14.10

Master intakes, there shall be two (2) 5" NST male intakes located, one (1) on the right and one (1) on the left side pump panel to provide easy connection for drafting or to a fire hydrant. The intakes shall have a removable strainer provided and 5" chrome plated long handle caps.

#### 13.14.10.1

Suction(s), there shall be one (1) auxiliary 2 1/2" NST female chrome plated swivel suction located on the left side pump panel. The suction shall have a 2 1/2" Akron Full-Flow swing out valve

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and be equipped with a 2 1/2" chrome plated swivel adapter with screen, and a 2 1/2" chrome plated plug and chain.

13.14.10.3

Intake suction relief, per NFPA 1901 standards there shall be a suction relief valve installed on the intake side of the pump.

13.14.11

Discharges, there shall be three (3) 2 1/2" NST male chrome plated discharges located, one (1) on the right and two (2) on the left side pump panel. The discharges shall have a 2 1/2" Akron Full-Flow swing out valve and be equipped with a 2 1/2" chrome plated cap and chain. The valves shall be controlled by a "tee" handle control provided on the pump panel.

13.14.12

Tank to pump line, per NFPA 1901 standards there shall be a 3" tank to pump line provided from the water tank to the pump. The line shall have a 3" Akron Full-Flow swing out valve with 4" galvanized piping and victaulic coupling. The flex connections installed between the pump and water tank shall give the plumbing system flex, thus minimizing stress on the line. The valve shall be controlled by a "tee" handle control provided on the pump panel.

13.14.13.1

Tank fill/pump re-circulating line, there shall be a 2" tank fill/pump re-circulating line provided from the pump to the water tank. The line shall have a 2" Akron Full-Flow swing-out valve with 2" high-pressure flexible hose. The flex connections installed between the pump and water tank shall give the plumbing system flex, thus minimizing stress on the line. The valve shall be controlled by a "tee" handle control provided on the pump panel.

13.14.14

Test ports, per NFPA 1901 standards there shall be pump system test ports mounted on the pump panel.

13.14.99

2 1/2" 30-degree elbows, all 2 1/2" discharges shall be equipped with a chrome plated 2 1/2" NST male, 30-degree elbow fittings.

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**Section 14: Hose Trays, Cross Lays, & Preconnects**

14.03.1

Hose cross-lay pre-connected, there shall be one (1) 1 1/2" NST swivel male pre-connect gated with a 2" Full-Flow swing out valve. Pre-connect shall have a "Innovative Controls" 2 1/2" 400# liquid filled stainless steel individual pressure gauge and control handle. The hose cross lay shall be made of aluminum and installed above the pump compartment. The hose cross lay shall have two (2) adjustable aluminum dividers and rubber tiles.

14.06.1

Hose cross-lay webbing, there shall be webbing installed on the hose cross-lay ends to secure hose.

**Section 15: Hard Suction & Ladder Carriers**

15.01.4

Hard suction trays, there shall be two (2) 5" X 10' aluminum Tread-Brite hard suction hose trays to be located on driver's side above the catwalk, and on the side of tank.

15.05.4

There shall be two (2), 5" X 10', PVC flexible hard suction hoses provided.

**Section 17: Chassis Accessories**

17.00.3

Hub and lug Nut covers, there shall be stainless steel hub and lug nut covers installed on front and rear wheels of tandem rear axle chassis

17.10.1

Tire pressure indicator, there shall be tire pressure indicators installed to allow for visual inspection of tire pressure at the tire.

17.11

Vehicle data recorder, there shall be a Weldon model #6444 vehicle data recorder installed on the chassis.

17.12

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Seat belt monitor, there shall be a seat belt monitor system installed. System shall indicate when someone is seated in a seat and if the seat belt is in use.

17.13

Heat exchanger, there shall be a heat exchanger installed that shall permit the use of water from the pump to cool the engine. The cooling shall be done without mixing the engine antifreeze and the pump water.

**Section 19: Chassis**

19.01

Midwest Fire Equipment furnished 2010 M2 Freightliner chassis (07 pre-emission) per specification attached:

Initial: \_\_\_\_\_  
Date: \_\_\_\_\_