



MIDWEST FIRE®

**PTX 2000 Tanker
Specifications**

Prepared for:

Stock 950

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

Initial: _____
Date: _____

PTX Series
2000-Gallon POLY-Elliptical Tanker®
Specifications

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STANDARD

Section 1: **Booster Tank**

1.00

The 2000 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 16" x 16" 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.

2.10.1

One (1) Innovative Controls, SL Series 14 LED light tank level gauge will monitor the water tank level and be located on the outside of the pump compartment. 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.

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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. 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 2100-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 knurled finish and chrome plated stanchion brackets.

4.02.1

Portable tank, there shall be one (1) 2100-gallon red portable tank and aluminum frame supplied. Liner to be made of 23 oz. durable nylon coated material.

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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 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 92" wide by 34" tall by 27" deep. The compartment shall have a 60" 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.

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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 92" wide by 34" tall by 27" deep. The compartment shall have a 60" 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.

8.01

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.

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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.

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.

9.03.3

Two (2) Whelen model 600 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 6 1/2" wide by 4 1/8" tall. Light assemblies shall be provided in chrome plated housing. Each light assembly shall be installed using a gasket between the housing and body.

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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.

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.

10.02.1

Siren, one (1) Whelen model 295SLSA1, 100 watt, six function Class A electronic siren shall be mounted in the chassis cab in a location convenient to the driver. The electronic siren shall include "hands-free" operation, full function, 17 Scan-Lock siren tones, and hard wired microphone. The siren control head shall be lighted for easy night operation.

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10.03.1

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

10.04.3

LED Flashing lights, the lower level warning package shall be fully NFPA compliant. The front zone shall be covered by two (2) Whelen model LINZ6 Series, flush mounted red LED flashers with chrome plated bezels. These lights shall be 4" wide by 2" tall and be mounted at the front of the chassis. The rear zone shall be covered by two (2), Whelen model 600 Series, flush mounted red LED flashers. These lights shall be 6 1/2" wide by 4 1/8" 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.

10.05.2

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) Whelen model RB6T Rota-Beam Series, dual reflector halogen rotating beacon, 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.

10.06.4

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) Whelen model LINZ6 Series, red LED flashers shall cover each of the side zones. These lights shall have approximate dimensions of 4" wide by 2" 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.

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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.

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.

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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

White reflective striping, the body and chassis shall have a 4" wide and a 1" wide white reflective stripe on each side and front of the apparatus per NFPA 1901 standards. The stripe shall be in a Z-shape pattern on the body sides.

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 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.

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- 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

13.02

The pump shall be a Hale, model HP300X, engine driven pump. Pump features include a high-strength aluminum alloy casing, silicone bronze impeller and wear rings, stainless steel impeller shaft, and direct drive.

Pump Ratings: 400 GPM @ 20 PSI
75 GPM @ 120 PSI

13.02.1

The engine shall be a four cycle air cooled 18 HP, V-Twin, Briggs and Stratton, model Vanguard gasoline engine, with integral fuel pump, 12- volt electric start, and manual start. The fuel will be connected to a 3-gallon fuel tank that is an integral part of the pump base.

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13.02.2

The pump control panel shall include a throttle lever, priming lever, Master On/Off switch, start push button, and choke control, low oil pressure warning light, and pressure gauge. The pump primer shall be a combination vacuum type exhaust primer and a spark-arresting muffler.

13.02.3

The pump shall be permanently mounted in the street side front compartment with Roll-o-matic anodized aluminum roll up doors for pump operation and service.

13.02.4

Tank to pump line, there shall be a 2 1/2" tank to pump line provided from the water tank to the pump. The line shall have a 2 1/2" Akron Full-Flow swing out valve with 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. A "tee" handle provided in the pump compartment shall control the valve.

13.02.5.1

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" plumbing. The flex connections installed between the pump and water tank shall give the plumbing system flex, thus minimizing stress on the line. A "tee" handle provided in the pump compartment shall control the valve.

13.02.6

Pump drain, there shall be one (1) pump drain provided to drain the suction side of the pump. The pump drain shall be controlled from a control handle located directly below the pump compartment.

13.02.7

Suction(s), there shall be one (1) 3" suction pipe provided at the pump for drafting or direct fill. The suction shall be equipped with a 3" NPT male X 2 1/2" NST female chrome plated swivel adapter with screen, and a 2 1/2" chrome plated plug and chain.

13.02.8

Discharge(s), there shall be one (1) 2 1/2" NST male discharge pipe provided at the pump. The discharge shall be equipped with a 2 1/2" chrome plated cap and chain.

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Section 14: Hose Trays, Cross Lays, & Preconnects

14.00.1

Hose tray pre-connected; there shall be one (1) 1 1/2" NST male, gated with a 1 1/2" Akron Full-Flow swing out valve. Valve to have a "tee" handle control in the pump compartment. The hose tray shall be 12" wide X 8" high X 120" long and made of polished aluminum Tread-Brite. The hose tray shall have rubber tiles and to be located above drivers side catwalk.

14.06.4

Hose straps, there shall be two (2) Velcro straps mounted on the hose tray to secure the hose.

Section 17: Chassis Accessories

17.00.2

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

17.10

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

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.

Section 19: Chassis

19.01

Midwest Fire Equipment furnished 2011 Freightliner M2-106 per specification attached:

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