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KKK-D-2778  
 26 March 1992  
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SUPERSEDING  
 MIL-D-28531C (YD)  
 16 August 1985

## FEDERAL SPECIFICATION

### DISTRIBUTORS, WATER TANK, TRUCK MOUNTED FRONT AND REAR SPRAY

This specification is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

#### 1. SCOPE

1.1 Scope. This specification covers water tank distributors with front and rear spray heads, rear spraybar, and mounted on a diesel engine driven truck.

1.2 Classification. The distributors shall be of the following types as specified (see 6.2).

- Type I - 1,000 gallon (gal) tank capacity, 16,000 pounds (lb) gross vehicle weight rating (GVWR), 4 by 2
- Type II - 2,000 gal tank capacity, 28,000 lb GVWR, 4 by 2
- Type III - 2,000 gal tank capacity, 37,000 lb GVWR, 6 by 4
- Type IV - 2,000 gal tank capacity, 46,000 lb GVWR, 6 by 6

#### 2. APPLICABLE DOCUMENTS

##### 2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

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 \*Beneficial comments (recommendations, additions, deletions) and any pertinent\*  
 \*data which may be of use in improving this document should be addressed to: \*  
 \*Commanding Officer (Code 156), Naval Construction Battalion Center, Port \*  
 \*Hueneme, CA 93043-5000, by using the self-addressed Standardization \*  
 \*Document Improvement Proposal (DD Form 1426) appearing at the end of this \*  
 \*document or by letter. \*  
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FSC 3825

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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#### Federal Specifications

- A-A-50498 - Valve, Foot, Cast Iron, Bronze and Polyvinyl Chloride
- W-B-131 - Battery, Storage, Vehicular, Ignition, Lighting, and Starting
- ZZ-H-451 - Hose, Fire, Woven-Jacketed, Rubber or Cambric Lined with Couplings
- ZZ-H-561 - Hose, Rubber, and Hose Assemblies, Rubber, Smooth Bore, Water

#### Military Specifications

- MIL-D-771 - Distributors, Bitumen and Water, Packaging of
- MIL-N-12314 - Nozzles, Fire Hose, Water: Spray and Stream
- MIL-C-52404 - Connections, Hose, Fire and Water

#### Federal Standards

- FED-STD-123 - Marking for Shipment (Civil Agencies)
- FED-STD-297 - Rustproofing of Commercial (Non-tactical) Vehicles
- FED-STD-595 - Colors Used in Government Procurement

#### Military Standards

- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-209 - Slings and Tiedown Provisions for Lifting and Tying Down Military Equipment
- MIL-STD-1223 - Nontactical Wheeled Vehicles Treatment, Painting, Identification Marking and Data Plate Standards
- MS 39153 - Coupling, Quick Disconnect, 3-inch, for Construction Equipment

(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents. The following other Government documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

Code of Federal Regulations (CFR):  
Department of Transportation (DoT):

- 49 CFR 325 - Compliance with Interstate Motor Carrier Noise Emission Standards
- 49 CFR 393 - Parts and Accessories Necessary for Safe Operation
- 49 CFR 570 - Vehicle in Use Inspection Standards
- 49 CFR 571 - Federal Motor Vehicle Safety Standards

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

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Code of Federal Regulations (CFR):  
Environmental Protection Agency (EPA):

- 40 CFR 86 - Control of Air Pollution from New Vehicles and New Motor  
Vehicle Engines: Certification and Test Procedure
- 40 CFR 202 - Motor Carriers Engaged in Interstate Commerce
- 40 CFR 205 - Transportation Equipment Noise Emission Controls

(Application for copies should be addressed to the Public Affairs Office, Environmental Protection Agency, Rockville, MD 20852; or to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

2.2 Other publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation (see 6.2).

Society of Automotive Engineers, Inc. (SAE):

SAE J534 - Lubrication Fittings

(Application for copies should be addressed to the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

Tire and Rim Association, Inc. (TRA):

TRA Yearbook

(Application for copies should be addressed to the Tire and Rim Association, Inc., 175 Montrose Avenue West, Copley, OH 44321.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 Description. The distributor consists essentially of water tank, water pump and pump valve station, front and rear header pipes with spray heads, rear mounted spray/sprinkler bar, controls, piping, and safety devices, mounted on a diesel engine driven truck having a GVWR as specified herein.

3.2 First article. When specified in the contract or purchase order (see 6.2), a sample shall be subjected to first article inspection (see 4.2.1 and 6.4).

3.3 Standard commercial product. The distributor shall, as a minimum, be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this specification but which are a part of

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the manufacturer's standard commercial product, shall be included in the equipment being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

3.4 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. Unless otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this specification.

3.5 Interchangeability. All distributors of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to ensure interchangeability of component parts, assemblies, accessories, and spare parts.

### 3.6 Design and construction.

3.6.1 Ambient temperatures. The distributor, including all components, accessories, and auxiliaries, shall operate satisfactorily at ambient temperature range from as low as -25 degrees Fahrenheit (oF) to as high as +125oF.

3.6.2 Vehicle and components. The vehicle, including all required components and accessories, shall comply to all provisions of EPA 40 CFR 86, EPA 40 CFR 202, EPA 40 CFR 205, DoT 49 CFR 325, DoT 49 CFR 393, DoT 49 CFR 570, and DoT 49 CFR 571, as applicable, in effect on date of vehicle manufacture.

3.6.2.1 Cab. The cab shall be of metal construction, standard full width, fully enclosed, heated, and insulated. Seats shall be upholstered and furnished with seat belts. Operator's seat shall be adjustable for height, forward, and rearward position. The window controls shall be manual operated. All glass shall be tinted safety glass. The cab shall be designed to provide the driver easy access from the ground to the cab compartment. All exterior step surfaces shall be non-skid or grated type. The cab defrosting and heating shall be thermostat controlled with multispeed fan, capable of maintaining the cab temperature to not less than 55oF and the defroster shall keep at least 75 percent of the windshield surface clear at the specified ambient temperature.

3.6.2.2 Engine. The engine shall be diesel-fueled, water-cooled.

3.6.2.3 Transmission. The chassis power train shall include an automatic transmission with not less than four forward speeds. An auxiliary transmission or transfer case, required to meet the requirements as specified herein, shall be included.

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3.6.2.4 Traction control. A traction control that actuates automatically to ensure that power is transmitted to the wheel having traction when the opposite wheel loses traction shall be provided on all rear axles. Maximum traction capabilities shall be maintained at all times under each drive wheel for the life of the vehicle.

3.6.2.5 Steering. The vehicle shall have front wheel, hydraulic assisted power steering. Failure of the hydraulic system shall not prevent manual steering of the vehicle.

3.6.2.6 Service brakes. The service brakes shall be power assisted of the vacuum-hydraulic system for type I, and a full air brake system for types II, III, and IV distributors.

3.6.2.7 Power-Take-Off (PTO). When furnished, the PTO shall have sufficient rating to operate the hydraulic powered equipment. A caution plate or a decal that reads "DO NOT OPERATE VEHICLE AT HIGHWAY SPEED WITH POWER-TAKE-OFF ENGAGED" shall be installed visible from the driver's seat. A red warning light to indicate PTO engagement shall be provided at the dash board.

3.6.2.8 Hydraulic system. The hydraulic system shall be furnished complete with all necessary safety devices, alarms, and controls for a satisfactory operation of the hydraulic driven equipment. No high pressure hydraulic flexible hoses shall be used inside the truck cab.

3.6.2.9 Operating controls. All controls required to operate the electric, pneumatic, and hydraulic components shall be properly identified, using universal symbols or English language, or both. Controls shall be located inside the cab and within reach from the driver's position.

3.6.2.10 Electrical system. The electrical system shall operate on a 12-volt negative ground. The charging alternator shall have no less than 60 ampere rating.

3.6.2.11 Starting system. Engine starting shall operate from a 12-volt negative ground battery(s). The battery(s) to be furnished shall be standard commercial or shall conform to W-B-131 as specified (6.2). Battery(s) conforming to W-B-131 shall be dry charged, without electrolyte and with sealed caps to prevent intrusion of moisture. Commercial battery(s) shall be of the maintenance free type with sufficient cold cranking amperes for the designed ambient temperature conditions.

3.6.2.12 Wheels and tires. Wheels shall be disc type. All wheels and tires shall be the same size and interchangeable between axles. Centerline difference between front and rear wheels shall be not more than 1 inch. Tires shall be wide-base tubeless steel belted radial with non-directional mud or traction tread. Wheels and tires shall conform to TRA recommendation. When specified (see 6.2), a fully inflated spare tire and spare tire carrier shall be furnished.

3.6.2.13 Outside rear view mirrors. Outside rear view mirrors shall be mounted on each side of the cab. The mirrors shall be of the combination type having flat and convex areas enclosed in a common housing. The flat portion

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shall have not less than 50 square inches and the convex portion shall have not less than 20 square inches of reflective surface.

3.6.2.14 Panel Instruments. Panel instruments shall be visible from the driver's location, and as a minimum, shall include the following:

- a. Engine hour meter (9999 reading).
- b. Keyed ignition/starting switch.
- c. Voltmeter or charging indicator.
- d. Fuel gauge.
- e. Oil pressure gauge.
- f. Engine coolant temperature gauge.
- g. Speedometer with recording odometer.
- h. Low air pressure warning light and audible alarm for air brake system.

3.6.2.15 Accessories. Accessories shall include, but not limited to, the following:

- a. Radiator coolant recovery system.
- b. Two tow hooks at both front and rear for the purpose of towing the vehicle.
- c. Fuel tank(s) capacity adequate for no less than 10 hours operation.
- d. Accessories for quick engine starting in cold weather (measured shot heat sensing ether injection system with not less than 12 ounces reservoir or glow plugs).
- e. Splash guards and stone throw protection.

### 3.6.3 Distributor components.

3.6.3.1 Water tank. The water tank shall be a welded steel construction, elliptical cylinder shape, and after fabrication, shall be hydrostatically or air tested to not less than 5 pounds per square inch gauge (psig). The tank shall have a top-mounted access hole with not less than 18 inches diameter. The access hole shall be equipped with a hinged, watertight, quick-clamped type cover. A sight glass type tank gauge, located so as to be readable from the driver inside the cab or a mechanical type gauge with accuracy of plus or minus 50 gallons of actual amount of water inside the tank shall be provided. Tank vent and overflow connection shall be 3 inches nominal diameter pipe.

3.6.3.2 Spray heads and spray bar. Each side of the truck (front and rear) shall be provided with remote controlled spray heads that are adjustable from 8 feet minimum to not less than 24 feet of spraying range. The spray heads shall be installed above the top of the vehicle bumper height. A remote controlled combination gravity/pressure type spray/sprinkler bar shall be mounted at the rear. Each spray head and the spray bar shall be capable of being operated independently or simultaneously from the driver's position.

3.6.3.3 Water pump. The water pump, powered by a PTO driven hydraulic motor, shall be self priming, single stage, single suction centrifugal, and have a capacity of not less than 350 gallons per minute (gpm) when operating at 30 feet discharge head and 25 feet suction lift. Pump suction piping shall be 4-inch nominal diameter, complete with connections to match the discharge end of the hose specified herein.

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3.6.3.4 Pump valve station. The pump valve station shall be located on the left hand side (street side) of the vehicle with the operating valves readily accessible to the operator standing on the ground. The instruction plate showing the valve manifold diagram and proper operating procedures shall be visible to the operator. All necessary piping, suction strainer, vacuum gauge (suction side), pressure gauge (discharge side), valves, fittings, safety device and controls, shall be complete to perform the following operations:

- a. Pump water from outside source (such as lakes, ponds, or streams) into the distributor tank.
- b. Pump water from outside source to a 1-1/2 inch hose outlet, without the water entering the distributor tank.
- c. Pump water from distributor tank to the spray heads.
- d. Pump water from distributor tank to a 1-1/2 inch hose outlet.

3.6.3.5 Suction hose assembly. The suction hose assembly shall consist of three 10-foot sections of 4-inch hose conforming to ZZ-H-561, grade B, style C, class 1. Each section of the hose shall be fitted with a 4-inch quick disconnect coupling (hose end and faucet end) conforming to MS 39153. One double adapter shall be furnished. A 4-inch foot valve conforming to type CI, style 1, in accordance with A-A-50498, complete with strainer, shall be provided for use with the suction hoses.

3.6.3.6 Discharge hose assembly. The discharge hose assembly shall be 1-1/2-inch diameter, 25 feet long and conforming to ZZ-H-451, type 1, class B. A nozzle conforming to MIL-N-12314, type III, class A, size 1-1/2-inch with 5/8-inch tip opening shall be provided. A reducing hose connection conforming to MIL-C-52404, type XV, class A, size 2-1/2-inch (NH) by 1-1/2-inch (NH), shall be provided to be connected to the hose end of a fire hydrant.

### 3.7 Performance.

3.7.1 Speed and gradeability. Speed requirements shall be met with the distributor loaded to specified GVWR.

3.7.1.1 High speed. When driven on a paved concrete or asphalt public road, the vehicle shall be capable of maintaining speed of not less than 55 miles per hour (mph). When driven on a concrete or asphalted road with 5 percent grades, the vehicle shall ascend at speeds of not less than 45 mph.

3.7.1.2 Low speed. With the transmission shifted to the lowest gear and with the engine running at not less than 75 percent of recommended governed speed, the vehicle speed shall be not more than 4.5 mph for type I, 5.0 mph for type II, and 3.5 mph for type III and IV.

3.7.2 Application and distribution. The rate of application shall be not less than 120 gpm when distributed through the front or rear spray heads and 465 gpm when distributed through all spray heads and spray/sprinkler bars. There shall be an even wetting of the road surface when water is sprayed with the vehicle traveling at 3.5 mph.

3.8 Ground clearance. The distributor, without disassembly of any component and moving at its own power, shall have ground clearance sufficient to

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negotiate, approach, and depart from a 100-foot loading ramp in a fully lowered position and inclined at an angle of 21 degrees from the horizontal.

3.9 Safety. For personnel protection, all rotating or moving parts and parts subject to high operating temperature, shall be insulated, enclosed or guarded. Each distributor shall be furnished with backup lights and audible alarm that is activated when the transmission is shifted into reverse gear.

3.10 Air pollution control. When specified (see 6.2), the distributor shall comply to the State of California's air pollution control regulation.

3.11 Overall dimension. The overall width shall be not more than 96 inches and the overall height shall be not more than 102 inches.

3.12 Rustproofing. The vehicle shall be rustproofed in accordance with FED-STD-297.

3.13 Tools. Each vehicle shall be furnished with tools required for exchanging mounted tire assembly with the spare assembly and shall include at least a hydraulic jack, jack handle, and wheel nut wrench. The jack shall be of such closed height to permit its location under the axle, or other satisfactory lift point at any wheel with flat tire. The jack, without blocking, shall be capable of raising any wheel of the fully loaded vehicle to a height adequate to permit removal and replacement of wheel and tire assembly.

3.14 Lubrication. Unless otherwise specified (see 6.2), means for lubrication shall be in accordance with the manufacturer's standard practice. The lubricating points shall be easily visible and accessible. Hydraulic lubrication fittings shall be in accordance with SAE J534. Where use of high-pressure lubricating gun with 1,000 pound-force per square inch (psi) or higher, will damage grease seals or other parts, a suitable warning shall be affixed to the equipment in a conspicuous location.

3.15 Servicing and adjusting. Prior to acceptance of the distributor by the Government, the contractor shall service and adjust the equipment for immediate operational use as required in the operator's manual. The servicing and adjusting shall include at least the following:

- a. Inflation of all tires.
- b. Adjustment of brakes.
- c. Proper functioning of all lighting and electrical systems.
- d. Wheel alignment.
- e. Adjustment of engine to include tune-up.
- f. Complete lubrication with grades of lubricants recommended for ambient temperature at the delivery point.
- g. Cooling system filled to capacity with a clean solution of equal parts by volume of water and antifreeze (ethylene glycol).

3.16 Lifting and tiedown attachments. When specified (see 6.2), the equipment shall be equipped with lifting and tiedown attachments. Lifting and tiedown attachments shall conform to type II or type III of MIL-STD-209. A nonferrous transportation plate shall be provided and mechanically attached to the distributor. Transportation plates shall be inscribed with a diagram showing the lifting attachments and lifting slings, the capacity of each



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attachment, and the required length and size of each sling cable. A silhouette of the item furnished showing the center of gravity shall be provided on the transportation plate. Tiedown attachments may be identified by stenciling or other suitable marking. Tiedown marking shall clearly indicate that the attachments are intended for the tiedown of the distributor on the carrier when shipped.

3.17 Identification marking. Identification shall be permanently and legibly marked directly on the distributor or on a corrosion-resisting metal plate securely attached to the distributor at the source of manufacturer. Identification shall include the manufacturer's model and serial number, name and trademark to be readily identifiable to the manufacturer.

3.18 Vehicle Markings. Vehicle markings shall conform to MIL-STD-1223, applicable to the branch of service or agency as specified (see 6.2).

3.19 Instruction plates. The equipment shall be equipped with instruction plates or decals suitably located, describing any special or important procedures to be followed in operating and servicing the equipment. Plates or decals shall be of a material which will last and remain legible for the life of the equipment. Plates shall be securely affixed to the equipment with nonferrous screws or bolts of not less than 1/8-inch diameter.

3.20 Cleaning, treatment, and painting. Surfaces normally painted in good commercial practice shall be cleaned, treated, and painted as specified herein. The color of the finish coat, conforming to FED-STD-595, shall be as specified (see 6.2). Surfaces to be painted shall be cleaned and dried to ensure that they are free from contaminants such as oil, grease, welding slag and spatter, loose mill scale, water, dirt, corrosion product, or any other contaminating substances. As soon as practicable after cleaning, and before any corrosion product or other contamination can result, the surfaces shall be prepared or treated to ensure the adhesion of the coating system. The painting shall consist of at least one coat of primer and one finish coat of acrylic-based enamel. The primer shall be applied to a clean, dry surface as soon as practicable after cleaning and treating. Painting shall be with manufacturer's current materials according to manufacturer's current processes and the total dry film thickness shall be not less than 2.5 mils over the entire surface. The paint shall be free from runs, sags, orange peel, or other defects. The end item, allied equipment, and attachments shall be the same color. Tank interior surface shall be sandblasted and painted with two coats of rust inhibiting paint.

3.21 Tool box. The vehicle shall be provided with a lockable metal tool box. The tool box shall be weather tight. Tool box size shall be adequate to store all the necessary tools and fixtures as required herein.

3.22 Workmanship.

3.22.1 Metal fabrication. The metal used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the metal to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to ensure uniformity of size and shape.

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3.22.2 Bolted connections. Bolt holes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided in accordance with good commercial practice, and all bolts, nuts, and screws shall be tight.

3.22.3 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads, when not countersunk or flattened, shall be of approved shape and uniform size for the same diameter of rivet. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member.

3.22.4 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

3.22.5 Castings. All castings shall be sound and free from patching, misplaced coring, warping, or any other defect which reduces the casting's ability to perform its intended function.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

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4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2.1).
- b. Quality conformance inspection (see 4.2.2).

4.2.1 First article inspection. The first article inspection shall be performed on one distributor when a first article is required (see 3.2 and 6.2). This inspection shall include the examination of 4.3 and the tests of 4.4. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.1.1 Certificate of compliance. The contractor shall submit for the approval of the contracting officer, or his authorized representative, a certificate of compliance to the first article test requirements cited in 4.4.1 through 4.4.5. The government reserves the right to examine and require a retest to determine the validity of the certification.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.3, the tests of 4.4.5, 4.4.10, and the preparation for delivery inspection of 4.5.

4.3 Examination. Each equipment shall be examined for compliance with the requirements in section 3 of this specification. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.4 Tests. Failure to pass any of the following tests shall constitute cause for rejection.

4.4.1 Brake test. The service, parking, and emergency brakes shall be tested to verify conformance to the applicable sections of DoT 49 CFR 570 and DoT 49 CFR 571 (see 4.2.1.1).

4.4.2 Air pollution control. The vehicle shall be tested to verify conformance to the applicable sections of EPA 40 CFR 86 and when applicable, to the State of California's air pollution control regulations (see 4.2.1.1).

4.4.3 Cab interior noise emission test. The vehicle shall be tested in accordance with the applicable sections of DoT 49 CFR 393 (see 4.2.1.1).

4.4.4 Exterior noise emission test. The vehicle shall be tested in accordance with the applicable sections of EPA 40 CFR 202, EPA 40 CFR 205, and DoT 49 CFR 325 (see 4.2.1.1).

4.4.5 Water tank leak test. The water tank shall be hydrostatic or air tested at no less than 5 psig for at least 10 minutes. Tank shall not show any leaks or permanent deformation (see 4.2.1.1).

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4.4.6 Ground clearance test. This test shall be conducted to verify compliance to 3.8. In lieu of this test, calculations to show the ability to meet the requirements shall be submitted for approval.

4.4.7 Road test. With the distributor water tank full, the vehicle shall be driven on a public highway to verify conformance to 3.7.1.

4.4.8 Spray test. Operate each spray head independently for minimum and maximum spraying range capability. Each head shall have a spraying range of not more than 8 feet (minimum) and not less than 24 feet (maximum) width. With the vehicle traveling at 3.5 mph, operate the front or rear spray heads separately, then continue on with the spray heads and spray/sprinkler bar operating simultaneously. The rate of discharge shall be not less than 120 and 465 gpm respectively.

4.4.9 Pumping operation. Perform all the operations required in 3.6.3.4. There shall be no leakage in the piping. Inability to perform any of the required operations shall constitute failure of this test.

4.4.10 Operational test. This test shall be conducted for not less than one hour. Drive the vehicle and operate each component repeatedly to demonstrate satisfactory operation of the equipment, but not limited to, ignition, brakes, pump, electrical/lighting, water control/piping system, PTO, and associated hydraulic systems.

4.5 Preparation for delivery. The distributor shall be inspected to verify conformance to the requirements of section 5.

## 5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging, and packing. Preservation, packaging, and packing shall be in accordance with the requirements of MIL-D-771 with the level of preservation, packaging and the level of packing as specified (see 6.2).

### 5.2 Marking.

5.2.1 Military agencies. Shipments to military agencies shall be marked in accordance with MIL-STD-129.

5.2.2 Civil agencies. Shipments to civil agencies shall be marked in accordance with FED-STD-123.

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The water distributors are primarily intended for use in soil stabilization and soil compaction operations. The water distributors can also be used for transporting or transferring water, for application of water for dust alleviation, sump pumping, washing of equipment, and as an auxiliary fire fighting equipment.

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6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Type required (see 1.2).
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- d. When first article is required for inspection and approval (see 3.2).
- e. When battery conforming to W-B-131 is required (see 3.6.2.11).
- f. When a spare tire and spare tire carrier is required (see 3.6.2.12).
- g. When compliance to the State of California's air pollution control regulation is required (see 3.10).
- h. When lubrication is other than as specified (3.14).
- i. When lifting and tiedown attachment is required (see 3.16).
- j. Departmental service or agency to which marking is applicable (see 3.18).
- k. Color of finish coat required (see 3.20).
- l. Level of preservation and level of packing required (see 5.1).

6.3 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DoD Federal Acquisition Regulations (FAR) Supplement, Part 27, Sub-Part 27.475-1 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data should be delivered by the contractor in accordance with the contract or purchase order requirements.

6.4 First article. When a first article inspection is required, the item will be tested and should be a first production item, or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one unit. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, approval of the first article, and approval of the certificate of compliance.

6.5 Part or Identifying Number (PIN). The PIN to be used for the distributors acquired to this specification are created as follows:

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PIN designation ----- KKK - 2778 - X
                        *       *       *
Prefix to indicate a Federal Specification -----*       *       *
Specification Number -----*       *       *
PIN code for type -----*

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PIN codes:

- 1 = Type I
- 2 = Type II
- 3 = Type III
- 4 = Type IV

KKK-D-2778

6.6 Subject term (keyword) listing.

Diesel-engine-driven  
Four-wheel drive  
Power-take-off  
Six-wheel drive  
Spray heads

CIVIL AGENCY COORDINATING ACTIVITY:  
GSA-FSS

PREPARING ACTIVITY:  
Navy-YD

(Project 3825-0201)

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Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.