

\*-----\*  
 \* NOT MEASUREMENT \*  
 \* SENSITIVE \*  
 \*-----\*

KKK-S-2777  
 24 February 1992  
 SUPERSEDING  
 MIL-S-17794E  
 10 June 1985

## FEDERAL SPECIFICATION

SNOWPLOWS, TRUCK MOUNTED, DISPLACEMENT TYPE,  
 36,000 GVWR, 4 BY 4

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 V-blade, reversible blade, and rollover blade displacement type snowplows, mounted on a four wheel, four wheel drive (4 X 4) commercial diesel-engine-driven truck.

1.2 Classification. The snowplows shall be of the following types, classes, and styles as specified (see 6.2).

Type I - V-bladeT  
 Type II - Reversible bladeT  
 Type III - Rollover blade

Class A - Chassis with dump bodyT  
 Class B - Chassis with sander body

Style 1 - With right hand leveling wingT  
 Style 2 - With left hand leveling wingT  
 Style 3 - With right and left hand leveling wings

\*-----\*  
 \*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. \*  
 \*-----\*

FSC 3825

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

KKK-S-2777

## 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).

#### Military Specifications

MIL-C-3774 - Crates, Wood: Open, 12,000 and 16,000 pound capacity  
 MIL-H-14435 - Hitches, Snowplow, Front of Wheel Mounting  
 MIL-C-46168 - Coating, Aliphatic Polyurethane, Chemical Agent ResistantT  
 MIL-C-52950 - Crates, Wood, Open and CoveredT  
 MIL-C-53039 - Coating, Aliphatic Polyurethane, Single Component, Chemical Agent ResistantT  
 MIL-V-62038 - Vehicle, Wheeled, Preparation for Shipment and Storage

#### Federal Standards

FED-STD-123 - Marking for Shipment (Civil Agencies)  
 FED-STD-297 - Rustproofing of Commercial (Nontactical) 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

(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, 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.)

KKK-S-2777

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

- 40 CFR 86 - Control of Air Pollution from New Motor Vehicles and New  
Motor Vehicle Engines: Certification and Test Procedure
- 40 CFR 202 - Motor Carrier 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 snowplow consists essentially of a 4 X 4 diesel fuel  
powered truck with a gross vehicle weight rating (GVWR) of not less than 36,000  
pounds and furnished with the required attachments such as snowplow blade, dump  
body, sander body, and leveling wing(s).

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).

KKK-S-2777

3.3 Standard commercial product. The snowplow 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 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 units 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 snowplow, including all components, accessories, and auxiliaries, shall be capable of being stored, started, and operated satisfactorily at ambient temperature range from as low as -25 degrees Fahrenheit (oF) to as high as +110oF. Other ambient temperature ranges shall be as specified (see 6.2).

3.6.2 Vehicle and components. The vehicle, including all required components and accessories, shall comply to the 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 the manufacturer's standard width, metal construction, fully enclosed, heated, and insulated. The seat shall be upholstered, adjustable (forward, backward, and height), and with seat belts. The windows and the keyed door locks shall be manually operated. Windshield shall be tinted for glare protection. The cab shall be designed to provide the driver easy access 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.

## KKK-S-2777

3.6.2.2 Transmission. The chassis power train shall include an automatic transmission with not less than four forward speeds.

3.6.2.3 Axle. Axles shall be of the full floating type designed for four wheel drive, single wheel mounting. The tracking difference between front and rear wheel centerlines shall be not more than 4 inches.

3.6.2.4 Transfer case. The transfer case shall provide positive drive to front and rear axles. Interaxle differential shall provide means for locking the differential action while the carrier is in motion. The interaxle differential shall be of the limited slip, manual or automatic locking type.

3.6.2.5 Steering. The vehicle shall have 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 of the full air brake system.

3.6.2.7 Power-Take-Off (PTO). When furnished, the PTO shall have sufficient rating to operate the hydraulic powered equipment. A dash mounted warning light to indicate PTO engagement shall be provided.

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, and located 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 80 ampere rating.

3.6.2.11 Starting system. Engine starting shall be from a 12-volt negative ground battery(s). 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. Tires shall be wide-base tubeless steel belted radial with non-directional mud or snow 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. Electrically heated 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 shall have not less than 50 square inches and the convex portion shall have not less than 20 square inches of reflective surface.

KKK-S-2777

3.6.2.14 Ground clearance. The ground clearance of the vehicle, including the attachments in the travel or raised position, shall be not less than 10 inches.

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

- a. Voltmeter or ammeter.
- b. Fuel level gauge.
- c. Lube oil pressure gauge.
- d. Engine coolant temperature gauge.
- e. Speedometer with recording odometer.
- f. Tachometer.
- g. Low air pressure warning light and audible alarm.
- h. Keyed starting switch.
- i. Engine hour meter (9999 reading).

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

- a. Four tire chain assemblies.
- b. Splash guards and stone throw protection.
- c. Tow hooks for the purpose of towing the vehicle.
- d. Two spot lights, located one on each side of cab and controlled at the driver side.
- e. One amber rotating warning light, located on top of cab to be easily visible to traffic coming from any direction.
- f. Accessories for quick engine starting in cold weather (ether injection, glow plugs, or intake manifold heater).
- g. Fuel tank(s) capacity adequate for no less than 10 hours operation.

### 3.6.3 Snowplow.

3.6.3.1 Type I. The V-blade moldboard of type I snowplow shall be fabricated from steel sheet of not less than 8 gauge (0.1644 inch) and shall be equipped with reversible cutting edges. Cutting edges shall be 1/2-inch thick, 8 inches wide, and of sufficient length to provide a clearing swath of not less than 102 inches in width. The face of the V-blade shall be smooth and with proper curvature to lift and roll the snow up and off the road. Full flare plates or spring loaded deflectors and adjustable shoes, casters, or heel adjusting chains shall be provided.

3.6.3.2 Type II. The reversible blade moldboard of type II plow shall be fabricated from metallic or non-metallic material as specified (see 6.2). Metallic moldboard shall be fabricated from steel sheet of not less than 10 gauge (0.1345 inch). Non-metallic moldboard shall have adequate thickness and strength designed for the intended use. The blade shall have a 1/2-inch thick cutting edge, not less than 6 inches wide, and not less than 120 inches in length. The blade shall be hydraulically adjustable to permit plowing at angles of 28 to 35 degrees in either direction. Moldboard shall be equipped with replaceable runners or shoes. Power reversing mechanism shall operate from full left to full right, or vice-versa, in not more than 20 seconds. The blade shall be equipped with spring controlled, shock absorbing unit which shall cushion the plow from road shocks and allow the plow to pass over 6 inches high road

KKK-S-2777

obstacles and return the blade to proper position after passing the obstacle. Flare plates, built-in deflectors, or spring-loaded deflectors shall be provided.

3.6.3.3 Type III. The rollover moldboard of type III plow shall be fabricated from steel sheet of no less than 10 gauge (0.1345 inch) and shall have uniform tapered shape, symmetrical about the longitudinal centerline. Adjustable bar shall be provided for regulating the angle of cutting edges with the ground. Moldboard shall be fitted with interchangeable, reversible, cutting edges 1/2-inch thick, not less than 6 inches wide, not less than 135 inches in length, and not less than three replaceable wear shoes positioned behind the cutting edges. A replaceable wear-resisting steel nose shoe or runner shall be provided at the front end of the cutting edge. A powered mechanism shall rotate the moldboard assembly from one discharge position to another in not more than 20 seconds, while the vehicle is in motion.

3.6.3.4 Leveling wing(s). The leveling wing(s) moldboard shall be not less than 10 feet long. The front end of the leveling wing shall be mounted ahead of the front wheel in order to give a continuous discharge of snow from the plow. The wing shall be positioned in such a manner that it cannot be affected by the motion of the front plow and can be hydraulically set in any angle and position. Wing shall be provided with renewable cutting edge and renewable shoes. A shock absorbing unit shall be furnished to cushion the wing from road shocks and allow the blade to pass over 6 inches high road obstacles without damage.

3.6.4 Dump body. Dump body shall be a low mount, rear dump type, and with not less than 5 cubic yards capacity. The hydraulic hoist shall tilt the dump body to a minimum of 50 degrees from the horizontal. A mechanical safety device to lock the dump body in the tilted position while being serviced or repaired shall be furnished.

3.6.5 Sander body. Sander body shall consist of steel hopper, a conveyor or unloading device, and spreader disk(s).

3.6.5.1 Hopper. The hopper shall be constructed from steel with not less than 6 cubic yards capacity. Catwalks made of non-slip steel grating shall be installed on both sides of the hopper. The hopper shall be provided with an agitating device(s) to insure a smooth flow of materials and eliminate clogging.

3.6.5.2 Conveyor. The conveyor shall be of the pintle, roller chain, or combination chain type and shall be easily adjustable. Discharge gate shall be adjustable and self locking in various positions for a controlled and uniform delivery. Feeder chute shall be steel and adjustable. A replaceable bolted steel wear plate, not less than 3/16-inch thick, shall be mounted below the conveyor.

3.6.5.3 Spreader disk. Spreader disk(s) with radial vanes shall be furnished. Disk and vane material shall be steel with 144 to 183 Brinnel hardness. Disk(s) shall be capable of delivering a spread pattern from 8 feet to not less than 30 feet in width while uniformly applying 4 to 5 pounds of sand per 100 square feet, with the vehicle moving at speeds of 18 miles per hour (mph). The spreader disk shall be hydraulic powered.

KKK-S-2777

3.6.6 Hitch and pusher bracket. The hitch and pusher bracket shall be the manufacturer's standard or when specified (see 6.2), shall conform to MIL-H-14435.

### 3.7 Performance.

3.7.1 Speed. Speed requirements shall be met with the snowplow loaded to specified GVWR with the plow in the transport position.

3.7.1.1 High speed. When driven on a concrete or asphalt public road, the vehicle shall be able to maintain speeds of not less than 55 mph and not less than 45 mph on roads with 4 percent grade.

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 3 mph.

3.7.2 Plowing. With snow condition of no less than 12 inches thick, density from 15 to 40 pounds per cubic foot, plow cutting edge positioned not more than 1/2-inch above ground, the snowplow shall be capable of clearing the road in one pass while traveling at 20 mph. The displaced snow shall not stick on the moldboard surfaces and shall not be thrown in front of the vehicle's windshield.

3.8 Safety. For personnel protection, all rotating or moving parts and parts subject to high operating temperature shall be insulated, enclosed or guarded. Each snowplow shall be furnished with backup lights and audible alarm, both activated when transmission is shifted into reverse gear. The alarm shall be audible at not less than 20 feet distance while operating in surrounding noise level of 90 dB(A).

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

3.10 Transport width. The transport width shall be not more than 102 inches.

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

3.12 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.

3.13 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



KKK-S-2777

high-pressure lubricating gun with 1,000 pound-force per square inch or higher will damage grease seals or other parts, a suitable warning shall be affixed to the equipment in a conspicuous location.

3.14 Servicing and adjusting. Prior to acceptance of the snowplow 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 recommended solution of water and antifreeze (ethylene glycol).

3.15 Lifting and tiedown attachments. When specified (see 6.2), the snowplow 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 snowplow. Transportation plates shall be inscribed with a diagram showing the lifting attachments and lifting slings, the capacity of each 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 snowplow on the carrier when shipped.

3.16 Identification plate. An identification plate will be furnished by the contracting officer for each snowplow. The contractor shall stamp all necessary data in the blank spaces of the plate provided for that purpose, and securely affix a plate to each unit in a conspicuous place with nonferrous screws, rivets, or bolts not less than 1/8-inch in diameter. The applicable nomenclature contained in the contract item description shall be placed in the top blank.

3.17 Identification marking. Identification shall be permanently and legibly marked directly on the snowplow or on a corrosion-resisting metal plate securely attached to the snowplow 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 marking. Vehicle marking shall conform to MIL-STD-1223, applicable to the departmental 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.

KKK-S-2777

3.20 Cleaning, treatment, and painting. Surfaces normally painted in good commercial practice shall be cleaned, treated, and painted as specified herein. 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 same color.

3.20.1 Color. The color of the finish coat, conforming to FED-STD-595, MIL-C-46168, or MIL-C-53039, shall be as specified (see 6.2).

3.21 Tool box. The vehicle shall be provided with a lockable, metallic tool box. The tool box shall be weather tight. Tool box size shall be adequate to store all the necessary tools 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.

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.

KKK-S-2777

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.

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 snowplow 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 4.4.4. The Government reserves the right to examine and require a retest to determine the validity of the certification.

KKK-S-2777

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.3, the test of 4.4.9, 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 in accordance with the applicable sections of DoT 49 CFR 570 and Dot 49 CFR 571 (see 4.2.1.1).

4.4.2 Air pollution control test. The vehicle shall be tested in accordance with the applicable sections of EPA 40 CFR 86, or when applicable, to California 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 snowplow shall be tested in accordance with applicable sections of EPA 40 CFR 202, EPA 40 CFR 205, and DoT 49 CFR 325 (see 4.2.1.1).

4.4.5 Road test. Fill the dump or the sander body to full capacity with dry sand. The snowplow shall then be driven on a public highway for 50 miles and shall be capable of maintaining speeds of not less than 55 mph, and 45 mph on roads with 4 percent grade.

4.4.6 Plowing test. This test shall be conducted with the vehicle travelling at 20 mph on a course of not less than 1 mile, to verify conformance to 3.7.2. When the required snow is not available, an alternate test method shall be submitted for approval.

4.4.7 Sanding test. When sander body is supplied, the hopper shall be filled with dry sand to capacity and the snowplow driven over a 1,000 feet course at 18 mph. Sand shall be evenly distributed at a rate of 4 to 5 pounds per 100 square feet of road surface with the spreader adjusted to spread sand at the following width:

- a. First test run = 8 feet wide.
- b. Second test run = 16 feet wide.
- c. Third test run = 30 feet wide.

The snowplow shall be weighed before and after each test run to obtain the weight of sand distributed.

4.4.8 Low temperature test. The snowplow shall be subjected to -25oF, or to the specified ambient temperature (see 6.2), for 24 hours. At the end of this period, the engine shall be started and kept running for not more than five

KKK-S-2777

seconds. Turn off engine and repeat procedure five times in succession. Repeat the on/off starting two more times at 2 hours interval. After passing the on/off start test, the engine shall be started and kept running until the engine normal operating temperature is reached. The snowplow components shall then be operated repeatedly for at least 30 minutes. There shall be no malfunctioning in the engine or components.

4.4.9 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, electrical/lighting, PTO, and associated hydraulic system.

4.5 Preparation for delivery inspection. The snowplow 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-V-62038 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.

5.3 Crated components. When specified (see 6.2), the blades and leveling wings shall be removed from the vehicle for shipment and shall be packed in open crates conforming to MIL-C-52950, type V, style A, class 1 or MIL-C-3774, type I, style A.

## 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 snowplows are intended for use as general purpose plows for high speed snow removal from airfield runways, taxiways, parking spaces, and roads.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Type, class, and style 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).

## KKK-S-2777

- e. When ambient temperature range is other than specified (see 3.6.1 and 4.4.8).
- f. When type II moldboard shall be fabricated from metallic or non-metallic material (see 3.6.3.2).
- g. When hitch or pusher bracket shall conform to MIL-H-14435 (see 3.6.6).
- h. When compliance to State of California's air pollution control regulation is required (see 3.9).
- i. When lubrication is other than as specified (see 3.13).
- j. When lifting and tiedown attachment is required (see 3.15).
- k. Departmental service or agency to which marking is applicable (see 3.18).
- l. Color of finish coat conforming to FED-STD-595, MIL-C-46168, or MIL-C-53039, as specified (see 3.20.1).
- m. Level of preservation and level of packing required (see 5.1).
- n. When blades and leveling wings are to be removed and packed in open crates (see 5.3).

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 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 the approval of the certificate of compliance.

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

```

PIN designation ----- KKK - 2777 - X X X
                        *      *      * * *
Prefix to indicate a Federal Specification --*      *      * * *
Specification Number -----*      *      * * *
PIN code for type -----*      *      * * *
PIN code for class -----*      *      * * *
PIN code for style -----*

```

PIN codes:	1 = Type I	A = Class A	1 = Style 1
	2 = Type II	B = Class B	2 = Style 2
	3 = Type III		3 = Style 3
	4 = Type IV		

KKK-S-2777

6.6 Subject term (keyword) listing.

Diesel-engine-driven  
Dump body  
Four-wheel drive  
Leveling wings  
Reversible blade  
Rollover blade  
Sander body  
V-blade

MILITARY INTERESTS:

Custodians

Army - ME  
Navy - YD

User Activity

Army - AV

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Navy - YD

(Project 3825-0204)

---

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.