

# Specifications

## for Street Flusher with Hydrostatic Driven Water Pump

### GENERAL

It is the intent of these specifications to describe a Street Flusher with hydrostatic driven water pump in sufficient detail to secure bids on comparable equipment. All parts not specifically mentioned, which are necessary to provide a complete Flusher, shall be included in the bid and shall conform in strength and quality of material and workmanship to what is usually provided to the trade in general. The Flusher shall be a current model under standard production by the manufacturer.

Any unit not conforming to these specifications will be rejected, and it will be the responsibility of the manufacturer to conform with the requirements unless deviations have been cited by the bidder and acceptance made on that basis.

### TANK AND FITTINGS

1. Capacity: \_\_\_\_\_ U.S. gallons. Tank shape has a modified elliptical cross section with cross section established for specified capacity.
2. Tank Shell : Constructed of 10 gauge steel and 10 gauge dished and flanged heads. Heads to be convex, and all seams to be welded by automatic or semiautomatic process.
3. Surge Plate(s) : Tank to be supported with full section surge plate(s) , dished and flanged, constructed of a minimum of 10 gauge steel. To be spaced to provide adequate tank strength and to minimize surging of water. Openings shall be provided in the surge plate(s) to allow a free flow of water to the outlet pipe and to allow complete drainage of the tank.
4. Manhole: 20" minimum inside diameter low profile, manhole, located on top of tank for emergency or maintenance use, quick release clamped band cover, and fitted with gasket.
5. Overflow: 4" diameter overflow, extending up into the manhole collar and draining through the bottom of the tank in such a location as to clear all chassis members.
6. Filling Intake: Minimum 2 1/2" pipe, entering the tank through the rear tank head, and extending upward into an anti-siphon dome. The fill line arrangement shall permit the filling hose to remain connected at all times.
7. Filling Strainer: Brass strainer, mounted horizontal in fill line at rear head of tank for self-cleaning in normal operation and easy removal when necessary.
8. Water Level Gauge: A full level indicator light is provided at rear of unit in easy view of operator when filling.
9. Tank Sump and Drain: 5" sump with 3" N.P.T. non-ferrous, noncorroding plug.

### PUMP

1. Type: Centrifugal, single stage, with vertically split case and cast iron impeller. To have 5" suction and 4" discharge, with heavy duty ball bearings to support extra large steel shaft.
2. Capacity: Shall have ample capacity for handling, one, two, three, or four flushing nozzles. Pump rated at 750 G.P.M. or to have sufficient capacity to operate up to four (4) nozzles at 175 G.P.M. and 50 P.S.I. each nozzle.

## **HYDROSTATIC DRIVE POWER UNIT (Pump Drive)**

1. Type: Hydrostatic transmission, front crankshaft driven, consisting of:

- a. Pump: Infinitely variable displacement pump with a minimum displacement of 4.57 cubic inches per revolution, axial piston type.
- b. Motor: Fixed displacement motor with minimum displacement of 2.8 cubic inches, axial piston type.

Entire transmission unit shall be capable of operating at pressures to 5000 P.S.I. and speeds up to 2800 R.P.M. hydraulic oil may reach temperatures up to 2000 without damage to the unit. Unit shall have internal valving, and shall be fitted with relief valve and high oil temperature signal in cab.

- c. Power Take Off: Hydrostatic transmission to be front crankshaft driven.

2. Hydraulic Components Include:

- a. High-pressure hose with swagged type split flange "O" ring fittings, per S.A.E. standards.
- b. Low-pressure hose installation shall be made according to transmission manufacturer's recommendations. Only top quality fittings, tubing and hoses to be used.
- c. Reservoir: Minimum 20 gallon hydraulic reservoir with dial thermometer and operating oil level indicator.
- d. Filter: 10 micron, replaceable cartridge type filter with vacuum gauge located in the line between oil reservoir and hydrostatic pump.
- e. Oil Cooler: Tank type, oil/water heat exchanger.

## **AUTOMATIC WATER SYSTEM CONTROL**

For flushing or sprinkling the water pressure control system is based on a nominal truck speed range of approximately 4-25 MPH. The exact speed depends on chassis drive train specifications. The Flusher hydrostatic transmission pump drive, when operated within the nominal range, is controlled by a sensing system which provides constant water pressure, regardless of water flow or vehicle speed, in the 4-25 MPH speed range. Status indicator lights, pressure gauges, and controls are included in the central control panel located in the cab convenient for drive control.

## **NOZZLES**

1. Number: Unit to be supplied with three adjustable nozzles.
2. Type: Brass, fabricated in two pieces, and held in position or adjustable with position lock nuts.
3. Capacity: 150 - 175 G.P.M. at 50 P.S.I.. each.

## **NOZZLE CONTROLS**

The discharge from each nozzle shall be controlled by an air operated 2" diaphragm actuated globe type valve. Water control is accomplished by an electric solenoid valve actuated by an electric switch located on a control panel within easy reach of the driver/operator in the truck cab.

Water pilot control valves available for trucks without air brakes.

## **PIPING**

Piping to be of highest quality, using steel pipe or combination of steel pipe and high pressure reinforced rubber tubing for increased flexibility. Suction line, tank to pump, to be 5" I.D. with rubber connection.

## **MISCELLANEOUS STANDARD EQUIPMENT**

1. LOW LEVEL INDICATOR: Red light on control panel registers when water level drops to 15" or less.
2. FILL HOSE: 2 1/2" x 16' for hydrant filling
3. LIGHTS AND REFLECTORS: To meet Federal Motor Vehicle Safety Standard No. 108. Includes tail, stop, backup, clearance, marker, turn signal lights and reflectors.
4. REAR BUMPER: Full width 5" pressed channel.
5. FENDERS: Full width flanged fenders over rear wheels.
6. DRAIN COCKS: In all low points for complete drainage of water system.
7. PAINT : Inside of tank painted with one coat rust resistant paint. Outside of tank painted with one coat of primer and two coats of white.

## **WARRANTY**

One year on material and workmanship except hydrostatic transmission which carries standard manufacturer's warranty.

With the bid shall be included manufacturer's descriptive literature and specifications on unit being bid, and a list of any exceptions to these specifications. Bidder will supply parts manual and complete operating instruction manual with bid if requested.

Bid shall include mounting on customer's chassis at factory and instruction of operator on maintenance and operation at factory.

## **FLUSHER OPTIONS (Add Options as Desired)**

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### **1A. DIESEL ENGINE DRIVEN WATER PUMP**

2A. STREAMLINE SKIRTING: Continuous sheet metal enclosure provided on sides and at rear covering most working components. Access door at rear for service accessibility and maintenance. (Access doors provided on left side, and/or right side when required for access to chassis components.)

10A. FIRE FIGHTING VALVE: 2 1/2" Underwriters approved valve with N.S.T. threads. Connected to pump discharge header.

10B. NOZZLE: One or two nozzles (may be deducted when not required).

11A. Power Take off: Hydrostatic transmission to be driven by a suitable heavy duty power take off, installed on the truck transmission, with shifting control in truck cab.

14A. FOURTH FLUSHING NOZZLE: Additional flushing nozzle with required valve and control. Fourth nozzle to be mounted on right front of unit.

22A. SPRINKLER ATTACHMENT: One flushing type nozzle with valve at rear of unit, adjustable horizontally and vertically to sprinkle up to 50' width. Includes on/off control switch in cab.

22B. SELF-FILLING ATTACHMENT: Includes means to prime pump with water reserved in tank, two 10' lengths of 3" suction hose, strainer and foot valve.

22C. 10" DUMP VALVE : Located on bottom of tank near rear. Remotely controlled from cab.

23A. SPRAY BAR: 8' spray bar with 1/8" nozzles mounted at rear. Includes on/off controls in cab.

24A. HOSE REEL, MANUAL: Hose reel mounted at rear with manual rewind. Includes 1 1/2" x 100' hose and adjustable spray nozzle.

- 24B. HOSE REEL, MANUAL: Hose reel mounted at rear with manual rewind. Includes 1" x 150' hose and adjustable spray nozzle.
- 25A. HOSE REEL, ELECTRIC DRIVE: With 1 1/2" x 100' hose and electric motor driven reel rewind.
- 25B. HOSE REEL, ELECTRIC DRIVE: With 1" x 150' hose and electric motor driven reel rewind.
- 26A. WARNING LAMP: A single 3600 rotating amber lamp with two sealed beam lights. Mounted on top of tank at rear.
- 27A. PAINT, CHASSIS CAB : To customer specifications. (Provide paint number).
- 27B. LETTERING: Two lines of 6" and 4" lettering on each side of unit, to customer specification.
- 27C. INTERIOR PAINT: Special rust inhibitor, in lieu of standard.
- 27D. EXTERIOR PAINT: Special (Paint specifications must accompany order).
- 28A. SKID MOUNTING: For domestic delivery
- 29A. EXPORT PROCESSING: Skid mounted
- 30A. EXPORT PROCESSING: Truck mounted

### **TRUCK CHASSIS RECOMMENDATIONS AND INFORMATION**

In order to take advantage of the optimum characteristics for the Flusher with hydrostatic driven pump, it is necessary that the truck chassis specifications include the following as applicable:

1. Single axle chassis, 120" - 126" C.A.
- 1A. Tandem axle chassis, 120" - 126" C.B.
2. Three (3) miles per hour desirable for minimum ground speed operation.
3. Manual transmission, 5 speed, (direct if fifth) with (lowest ratio) two speed rear axle.
- 3A. Automatic transmission, Allison MT-650 and a two (2) speed rear axle.
4. Front and rear gross truck axle weight ratings and gross vehicle weight ratings.
5. If crankshaft takeoff drive desired - chassis must be ordered and built for front P.T.O. drive installation.
6. Most tilt cab chassis are not available with front crankshaft drive.
7. If any changes are required to shorten or lengthen the wheel base/cab to axle, or frame has to be lengthened, not covered by the original bid or quotation, work will be performed on a time and material basis. If estimated cost is required before work is commenced we must be notified in writing.