



**MISSOURI DEPARTMENT OF TRANSPORTATION
TRUCK MOUNTED DISTRIBUTOR SPECIFICATIONS
FOR A HYDROSTATIC SYSTEM ASPHALT DISTRIBUTOR**

GENERAL: The following specifications shall cover and include securing a complete truck and front crankshaft mounted PTO-driven hydrostatic transmission powered, self-contained asphalt distributor unit. This unit shall have either a 1750, 2800, 3000, or 3500-gallon capacity. A weight distribution analysis shall be provided for each different-sized distributor.

CAB/CHASSIS: Provide the recommended truck chassis to legally stay within the state of Missouri's road and bridge laws for all four respective size distributors. Acceptable makes are International and Freightliner. Horsepower to be a minimum 230 for the 1750-gallon unit. Horsepower to be a minimum of 310 for the 2800, 3000, and 3500-gallon units. Shall include front PTO provisions (crank drive), stationary front grill and front frame extensions. Shall include air brakes, air dryer, air conditioning, exterior aluminum or stainless steel LH and RH power mirrors; RH and LH door armrests, RH and LH cab entry assist grab handles; LH running board; drip moldings over doors; storage box on RH side of dash with door and latch. Front tires to be 11R22.5 for the 1750-gallon unit. Front tires to be 315/80R 22.5 on the 2800, 3000, and 3500-gallon units. Transmission to be 8-speed manual with double low. An electric hour meter that measures engine hours must be installed. Exterior color to be Federal Standard #595B (Colors to be used in Government Procurement) "Highway Yellow" #13432 or equal. Backup alarm to be OSHA approved.

The minimum GVWR on the front axle of the 1750-gallon unit shall be no less than 12,000 lbs. The rear axle GVWR shall be no less than 21,000 lbs. The 2800-gallon distributor units shall be no less than 14,000 lbs. The rear shall have a minimum of 34,000 lbs. On the 3,000-gallon and the 3,500-gallon distributor units, the front axle shall have a GVWR of 16,000 lbs., with the rear axle 40,000 lbs.

The distributor shall be current model, with proven field performance under production by the manufacturer. The distributor is to be of standard design, including all accessories, tools and special features. A complete detailed description of the distributor unit is to be included with bid.

The distributor must be in compliance to Federal regulation 173.242 and B13 special provisions standards. The 1.) Manufacturer's Data Report and 2.) Certificate of Compliance must be supplied by the manufacturer at the time of the bid. Asphalt distributors in compliance with Federal Regulation 406-198A are acceptable.

All stainless steel will be 304 stainless steel. MoDOT does **not** require that the tanks for these distributors be constructed of stainless steel. It is MoDOT's intent that **if** any stainless steel is used in the construction of these distributors, that it be 304 stainless steel.

TANK: The tank is to be elliptical or cylindrical in shape, made of not less than 10 gauge shell and 7 or 8 gauge flat, flanged, reinforced heads or 10 gauge dished and flanged heads.



INSULATION: To be fully (front, rear and sides) insulated with approved insulation material and completely covered with a minimum .040 aluminum jacket or steel heads primed and painted enamel black.

SURGE PLATE(S): The tank shall have full cross section surge plate(s), dished (flat reinforced is acceptable) and flanged, with openings for free flow of material to the tank pump, large enough for a man to crawl through.

ACCESS HOLE: Minimum 20" manhole and spill collar, overflow pipe, and an access ladder mounted in front of rear axle on passenger side (for safety) for access to manhole from ground level. (Hub on the wheel will not be used as a step up to the ladder). Or the access ladder may be mounted on the rear of the unit with a walkway to the access hole. (Spray bar will not be used as a step up to the ladder).

TANK GAUGE: The float type tank gauge, calibrated in 50-gallon increments will be visible from the front and rear.

THERMOMETER: The armored type pencil thermometer registering 50 to 450, or 100 to 600 degrees Fahrenheit will be side mounted in the dry well on the driver side as well as a 4" dial type thermometer mounted in the same location.

FLUES: Double U-Type return flues running the full length of the tank.

MEASURING STICK: Steel or aluminum measuring strip in 50-gallon graduations.

BURNERS, LPG: Two (2) stationary self-vaporizing, liquid petroleum gas (LPG) burners and manual re-light feature. Capacity of approximately 1,000,000 BTU per hour per burner. Bleeder valves shall be installed at each burner.

FUEL SUPPLY: LPG fuel will be supplied to burners from one, 52-gallon frame mounted tank with fill valve, outage valve, vapor valve, relief valve, liquid withdrawal valve and gauge.

LPG tanks and installation will conform to latest ASME Code and ICC Regulations.

POWER UNIT - HYDROSTATIC TRANSMISSION: To be fully hydrostatic, providing a constant application rate at a minimum of 1300 RPM.

High-pressure piston type, 90 Series Sundstrand pump with 2.1 CID hydraulic motor. With internal protective system, hydrostatic transmission pump to be driven by a front mounted crankshaft PTO. Controls are to be located in the truck cab. Hydraulic reservoir to have a minimum capacity of not less than 20 gallons with a glass site indicator on the side. In cab hydraulic oil over 200° temperature overheat light indicator shall be provided.

FILTER: (2) 10-micron filters with replaceable element are to be incorporated in the hydraulic system.



ASPHALT PUMP: To have a capacity of not less than 400 GPM positive displacement rotary gear type with micro-control for setting asphalt pump discharge rate located in truck cab.

CONTROLS AND INSTRUMENTS: Complete hydrostatic pump controls and in cab one-person air controls for the following functions: spray bar controls, power on/off, control of spray bar in 1' lengths, circulate/spray control, asphalt pump circulating system, asphalt pump control, tank circulate, load lines (front load also) and transfer. Lift shift and folding wings should be hydraulic powered. All necessary controls and instruments shall be located in the cab and readily accessible to the operator. Controls to include automatic applicator rate controller which will maintain application rates in 1/100 gallon increments within engine RPM and ground speed parameters specified by the manufacturer regardless of spray bar length. In cab controls shall allow the operator to control the flow of material through the spray bar in any combination of 4" to 1' lengths. All automatic controls shall include diagnostic functions with on-screen computer error messages. Electronic pump speed control, settings and readouts for application rate, spray bar width, flow and speed calibration, FPM, GPM, total feet traveled and total square yards traveled by use of Dickie John radar horn or equal will be displayed in cab **and** at rear of unit (rear display). Read-outs will have standard units measurements as well as metric units measurements.

AIR SUPPLY: The chassis will be supplied with a full air brake system, which includes a 12 cu. ft. air compressor. If the air brake system does not supply enough air for operation of all air controls and spray bar, a complete independent air system must be provided. Distributor shall have own separate air reservoir with check valve and shutoff valve.

AIR OPERATED FULL CIRCULATING SPRAY BAR: The sliding spray bar configuration is to be full circulating back to the tank type 18' in length, made up with (2) 8' sliding bars with the remaining length made up of 2' extensions and/or 1' extensions. Some districts may require a 24' configuration.

The folding spray bar configuration will supply asphalt to spray bar in solid metal piping with ball type joints or flex tubing. Each nozzle shall have an individual shut-off valve. Spray bar to have full power lift folding wings with safety shut off switches. Spray bar to be air operated from air supply system complete with driver side controls. The spray bar sections are to be easily locked firmly in position within distributor width providing for positive protection when traveling. The eighteen foot spray bar is to have three complete sets of nozzles, one set of nozzle openings to be "0"(Rosco) or "3351008"(Etnyre), "1"(Rosco) or "3352205"(Etnyre), and "2"(Rosco) or "3352204"(Etnyre). (An exchange in size may take place if needed and if the set to exchange has not been used.)

Unit shall be equipped with power shift and lift (shift will have its own switch and lift will have its own switch) each movement providing various spraying widths and heights, with instant start, cutoff, no drip feature and a safety breakaway feature that needs no more than a pin replacement to continue normal operation.

End caps for the air hoses on the extensions will be supplied for when the extensions are removed.



SPRAY GUN: Unit to have a lightweight hand spray gun with cold handle, nozzle, not less than 25' of minimum 3/4" rubber hose and couplings. Hand spray wand may be either a single, double, or triple nozzle configuration.

CLEANING SYSTEM: Unit shall have pump, distributing lines, and spray bar cleaning and power wash down system consisting of a 25-gallon cleaning fluid supply tank, piping, fittings and valves. It shall be designed to allow quick and thorough cleaning after each time used. A separate waste holding tank will be mounted if more than one gallon of cleaning fluid is needed for each washout.

LOAD LINES: Load and unload from the rear load line. The unit shall have a 3" load line on the rear LH or RH side with a male quick coupler (no *substitute*) and end cap and should have a strainer. If front load line option is provided both front and rear load lines shall be independent or shall be connected together with an easily accessible shut-off valve which will allow the independent use of either the side or front load lines.

FENDERS: Performed full-length aluminum fenders, which cover the rear wheels, should be provided. The fenders shall be easy to remove by one person. Mud flaps for front and rear will also be supplied.

TOOLS: All necessary tools/wrenches for operation of distributor are to be provided in an attached toolbox. Bar soaking box designed to hold tools and connectors. Box to be capable of holding diesel fuel or cleaning solvent with splash-proof lid and drain plug.

A listing of available videotapes and/or literature for training will be made available with the bid

COLOR

Complete distributor unit except aluminum and stainless steel parts shall be painted with prime coat and finish coat of black enamel.

OPTION: Front load line to include a 3" load line plumbed to the front of the truck through the front bumper and have a male quick-coupler, screen, end cap, and a pressure-relief valve. The front load line shall be 3" rubber coated or steel asphalt hose where possible, be securely fastened beneath the truck chassis and must have heat shielding or metal pipe if needed where the line passes the truck exhaust system. A 7' long 3" diameter rubber coated asphalt transfer hose shall be carried on the front bumper and mounted in such a manner for easy removal and replacement.

The Missouri Department of Transportation Commission reserves the right to waive technicalities and to reject any or all bids and no bid is final until formally accepted by the Commission.