

Specifications for Trailer Mounted Thermoplastic Melting System:

CAPACITY:

Trailer: 14,000 GVWR; twin 7,000 lb. axle system

SIZE:

Overall length: 21'
Deck length: 15'
Deck width: 101"
Deck height: 33"
Tongue length: 5'

KETTLE CAPACITY:

| Quantity | AIR JACKETED |
|----------|--------------------|
| 2 | 1500 lbs DIESEL |

DECK AND FRAME: The deck and frame shall be all steel construction. The deck shall be constructed with minimum 3" x 4.1-lb/ft steel channel cross-members. The deck shall be covered with 1/4" H.R. plate. The trailer frame rails shall be constructed with 6" steel channel. Stake pockets shall be provided, 10 on each side.

TIRES / WHEELS:

Four LT 235/80 R16 (Load Range "E") mounted on 8-lug wheels

COUPLER HITCH*: 2-5/16" ball type

* Coupler is adjustable and includes safety chains.

TONGUE JACK: 5,000 lb. rated screw type jack firmly attached through tongue.

BRAKES: Electric brakes on both axles. Emergency breakaway switch and 12-volt battery provided to allow independent operation of brakes.

LIGHTS & ELECTRICAL: LED tail and running lights provided in accordance with Federal D.O.T. regulations with all wiring in protective conduit. License plate mounting bracket attached and six-way male connecting plug with matching female plug provided. Wiring Harness shall be enclosed in continuous protective loom



PAINT:

1. One Coat High Solids Primer
2. One Coat Acrylic Enamel Color: black.

DIESEL FUEL: A 35-gallon diesel fuel tank shall be located on the trailer. The tank will hold fuel to supply the diesel engine for the hydraulic system and diesel burners. Tank as well as the necessary piping, shut-off valves and flex lines shall be provided.

STANDARD EQUIPMENT:

1. Applicator Crane-Bed mounted Hydraulic Crane provided to lift applicator onto and off of trailer.
2. Applicator Lift Chain
3. Applicator Tie Downs
4. Room on the Deck for 1-Skid of Material & 1-Apollo or 2-Apollos (no material)

**(2) AIR-JACKETED THERMOPLASTIC MELTING KETTLE, DIESEL FIRED
SKID MOUNTED 1500 POUND VERTICAL AIR JACKETED**

GENERAL:

It is the intent of these specifications to describe the minimum requirements for a vertical mounted thermoplastic heating kettle equipped with a hydraulic driven agitator, an insulated air jacket surrounding the thermoplastic tank and heated by a diesel fired gun burner. All equipment/options are to be factory installed.

CAPACITY:

The internal thermoplastic tank of the kettle shall be cylindrical in shape, vertically mounted, have a minimum capacity of 1500 pounds, and shall be capable of heating block and granulated thermoplastic.

KETTLE:

The kettles shall have the following capabilities and be equipped as indicated.

Heated indirectly by a diesel burner with a minimum rating of 250,000 BTU, the burner shall be mounted on center vertically under kettle and shall have easy access on all sides for maintenance. The burner flame shall fire upwards toward the bottom of the material tank.

A ¾" 304 stainless steel deflector plate will be mounted between the burner flame and the material kettle bottom plate. The deflector plate shall be easily removable and require no tools for replacement, e.g. welder, torch or hand tools.

The burner shall be vented at the top of the kettle. Each vent shall be provided with a rain cap with draft protector to prevent rain from entering the heating chamber.

Heat transfer shall be by a 2" minimum heated air jacket surrounding the thermoplastic tank and shall be insulated by 2" thick ceramic mineral wool insulation contained within removable side panels. Insulation on panels shall not be exposed. Panels must be bolted to the top, bottom and sides of the steel frame work of the kettle and be easily removable for maintenance. Kettle top and bottom shall be insulated with 2" thick ceramic mineral wool insulation and not be exposed.

A loose blanket of 2" insulation shall cover the kettle combustion chamber bottom.

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A center heated air riser chamber shall allow hot burner air to heat thermoplastic from the center to the outside, effectively increasing the heat transfer area and decreasing the time of agitator startup when heating a kettle with cold material. Heated air riser chamber will extend up at least 40% of the height of the interior material chamber and contain the lower agitator support.

An agitator driven by a low speed high torque hydraulic motor rotating at approximately 30rpm will be provided. The agitator shall be equipped with three blades spaced, one at the bottom, one at the middle and one just below the full kettle capacity. Agitator blade to side of tank clearance shall be no more than a 1/4". The agitator shaft will be 1 15/16" in diameter and supported by a four bolt flange style bearing at the top. The lower end of the agitator shaft will have a bolt on replaceable pilot shaft tip and be supported by a replaceable internal race bushing. The shaft will be coupled to the hydraulic motor with a slip shaft type drive coupling that allows vertical movement between agitator shaft and hydraulic motor to compensate for thermal expansion. Jaw or chain type couplings will not be allowed.

Direct reading thermometer to indicate the thermoplastic temperature shall be marked "Thermoplastic".

Diesel burner is controlled by an adjustable digital temperature controller with temperature read-out.

Kettle top plate with agitator motor and bearing support shall bolt to the top of kettle; removal shall expose the full inside diameter of the melting chamber for easy cleaning when required. Top plate shall also contain safety loading chute, lift D-Ring and melting chamber hooded exhaust vent. Top of kettle shall be weather proof this includes loading chute and vent to prevent water from entering the melting chamber.

Loading hatch will be weather proof and of the safety type. The melting chamber will be covered whether the door is open for loading or closed. The loading door shall open down and out creating a shelf to rest material (block or granular) on prior to loading, the back half of loading door shall close off the melting chamber to minimize any splash back or flash from contacting the operator. When the loading door is closed it shall tip the material into the melting chamber and close off the melting chamber while doing so.

Discharge will be a 4" inch pipe set 50% below melting chamber bottom plate and shall allow full port drainage from kettle. A 4" knife valve will be fitted to start and stop the flow of molten material.

Fork lifting shoes 3" x 9" on 33" centers will be an integral part of the base of kettle.

A hinged inspection door with latch will be placed in the side of the kettle for inspection of the burner combustion area of the kettle. The door will be insulated; door opening dimensions will be 24" wide x 12" high. Opening will be bordered with steel sheet so no insulation is exposed.

MISCELLANEOUS:

The heating kettle shall be provided with the following miscellaneous requirements.

- Adequate guards to cover moving parts.
- Placards, stencils and decals indicating potential hazards.

PAINT:

All exposed metal surfaces shall be primed with a rust and heat preventative and finished in a high heat resistant paint.

WORKMANSHIP:

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The equipment and any accessories shall be a product of good workmanship and shall be free from any defects that will affect their appearance or serviceability.

GENERAL:

Each unit and any accessory shall be delivered completely assembled and ready to operate.

The component parts of the unit shall be new and of proper size and design to safely withstand the maximum stresses imposed.

All kettle materials will be constructed of mild steel unless otherwise noted within this specification.

HYDRAULIC POWER SOURCE (DIESEL ENGINE):

A diesel engine powered hydraulic system shall be provided. The system shall provide hydraulic power for the melter kettle agitator. The system shall include the following items or features:

- A. Water-cooled, 10 HP continuous (Minimum), constant speed, two-cylinder diesel engine, with electric start, and electric alternator/starting battery recharge circuit.
- B. Hydraulic pump properly sized for the melter agitators and mounted directly to engine PTO. (No belt driven system is allowed.)
- C. Starting battery in a ventilated, weatherproof, vandal proof enclosure.
- D. Hydraulic reservoir including; 25 micron return line filter with filter change indicator and bypass.
- E. Agitator drive control: open-center, manually operated spool valve for clockwise and counterclockwise agitation; flow restricting needle valve for speed control; and a hydraulic pressure gauge.
- F. Hydraulic hoses and fittings shall be in accordance with SAE J516, J517, and J1213 recommended guidelines.
- G. Vibration isolators under power pack mount.

TECHNICAL MANUALS: Two sets of operator's manuals, service manuals, parts books, wiring diagrams and applicable technical information shall be supplied with each unit.

TECHNICAL SERVICES:

The services of at least one competent technician, trained in the use and operation of the striping machine shall be provided for 2 days of onsite training after delivery of the equipment.

OPTIONS: (Priced Separately)

PLASTIC SCREED CARTS:

Scope: It is the intent of these specifications to describe the minimum requirements for a hand-propelled applicator suitable to extrude and pre melt thermoplastic pavement markings with a temperature control system and can later be converted to combine a melting apparatus.

| Empty Weight | Material Capacity | Dimensions |
|--------------|-------------------|-------------|
| 270 lbs. | 250 lbs. | 48"x39"x31" |

Installation Performance: The unit shall be capable of properly installing every type of thermoplastic pavement marking application (longlines, skips, messages, arrows, etc.).

Material Holding Tank: The tank shall be all aluminum construction and must have a one-quarter inch thick oval bottom and one-quarter inch thick straight wall sides (a vertical pot is not acceptable). The

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outer rectangular aluminum skin shall be insulated and have ten heat vents to allow for proper ventilation of burner gases. There shall be two hinged rectangular doors covering the material holding tank. A removable screen shall be provided to filter out foreign material during molten thermoplastic kettle transfer.

Exterior Construction: The unit shall be all aluminum construction where the front houses the material holding tank and the rear a 20-pound LPG fuel tank with proper safety heat controls. The fuel tank compartment shall be open to allow for maximum air circulation. The fuel bottle shall be held securely by means of an upper clamp. There shall be four lifting rings located on the machine to allow for ease and safe lifting of the empty machine. A door in the outer skin shall allow for access to the burner chamber for lighting.

The applicator shall ride on three wide airless tires, mounted in such a fashion as to allow one operator easy drag-free propulsion. Both the front and rear axles of the machine shall be made of stainless steel.

Hand Controls: A handle, located on the left side, shall enable the operator to keep material agitated during operation. Two lever handles shall be located alongside on the right and easily controlled with a single hand, the outside lever opens and closes material valve and the inside lever activates the extrusion die and bead dispenser.

A single speed and parking brake, located just below the propulsion handle, shall be provided to prevent the applicator from moving while being refilled and to slow its speed when traveling down steep terrain.

Heating System: Two jet ring burners, with a minimum total of 30,000 BTU rating per hour, shall be mounted in a compartment under the molten tank for maintaining thermoplastic material at proper melting and application temperatures.

A pilot generator lighting system control shall be located under the front of fuel tank compartment with the pilot easily accessed behind an observation door to enhance operation safety. The material shall be controlled by means of an automatic temperature control system, mounted on the aft wall facing the operator, designed to melt and maintain material temperatures between 400F and 450F, monitored by a thermocouple that is positioned in the material holding tank.

An aluminum heat and windshield shall be mounted on the applicator's right to cover the extrusion die. It shall contain a single, 11-inch by 7-inch, radiant heater to direct heat on the die and material valve. The side of the shield shall fully swing open for easy access to the extrusion die. Open flame heating directly attached to die is unacceptable.

Each heater shall have an independent gas line and regulator to provide maximum fuel economy and operation safety.

Pointer System: The applicator shall be equipped with a heavy-duty pointer system indicating the location of applying the thermoplastic pavement marking. The pointer shall be adjustable left or right and freely swivel up and down under spring tension, holding any position without requiring hand adjustment or bolting.

Extrusion Die System: The heat shield must contain a knob-control height adjustable spring-activated extrusion die hanger bar. The extrusion die shall automatically interlock and disconnect from the heat shield without the need of a separate bolt or connecting rod.

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The connected extrusion die shall be completely height and angle adjustable by means of a hand rotatable knob located on top of the heat shield. A properly secured and adjusted die shall be capable of accomplishing a true, straight thermoplastic line.

The heat shield shall accommodate various width extrusion dies from 4" to 12". The extrusion die shall receive material from the molasses valve while in the user's direct view. The lines will be squarely started and stopped by means of a swing door operated by dual, fast closure, heat shielded springs. The die shall contain tungsten carbide protected runners to ensure long wearing on road surfaces.

The die shall open to the width of the line and to a minimum of 7/8 inch away from the die trough, exposing the road surface for maximum application adhesion and speed.

All die parts shall be high temperature and rust resistant metal

Bead Dispensing System: The applicator shall be equipped with one stationary variable width bead dispenser, aligned directly behind the die, capable of evenly dispensing through a front driven, rotating stainless steel knurled shaft, six pounds of glass spheres per hundred square feet over and within 6 inches of the deposition of the molten thermoplastic extruded line notwithstanding the speed of the thermoplastic application. This bead dispenser shall be quickly adjustable to apply a 4", 6", 8", or 12" width even distribution of glass spheres. In order to prevent wasted bead droppings, the knurled shaft shall not rotate one half inch wider than the thermoplastic line width

The bead reservoir shall be aluminum constructed to hold a minimum of 50 pounds of glass spheres.

DIES:

The die sizes are as follows: 4" (.090") die, 6" (.090") die, 8" (.090") die and 12" (.090") die.

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