

Stepp VS PB Loader

This is an outline that explains the differences between the Stepp STPH and the PB loader.

Hopper

PB loader is a double wall hopper with the exhaust gases from the burner wrapping around the unit. The double wall hopper tends to have uneven heating. The closer to the burner the hotter the tank is the farther away from the burner the cooler the hopper is.

The hopper shall be an oil jacketed triple wall constructed hopper. The inner hopper shall be constructed of 10 gauge A36 steel with the oil jacket to be constructed of 10 gauge A36 steel and the hopper shall be insulated with 2" of high temperature insulation and covered with a 16 Gauge steel insulation jacket. The unit will be heated with a 12 volt forced air Diesel Fired burner system. The diesel burner will heat the oil jacket and the oil jacket will deliver smooth even heating throughout the hopper to heat the asphalt material. The oil jacket will range from 2" on the sides of the unit and 12" on the bottom of the unit. The burner will fire into a flue that is submerged in the bottom of the oil jacket and the exhaust will be discharged into the hopper to prevent asphalt bridging and getting optimum efficiency and a "greener" Friendlier heating system. Diesel Burner or Propane burners shall be controlled with a digital thermostat control to maintain and monitor asphalt temperatures. The hopper will be covered with 2 hydraulically opening doors that have a minimum of 3" of closed cell polyurethane spray foam insulation that has an R value of R9 per inch. Doors shall open by means of hydraulic gear boxes. The door shall completely open a full 270° and lay on the side of the hopper leaving no door sticking up vertically. An optional Anti-bridging breaker is also available.

Burner

The PB loader uses a vapor LP burner system with low pressure fuel. The vapor LP burners do not create the BTU'S that a conventional liquid LP burner system can. The lower pressure burners also tend to have problems staying lit in windy conditions.

The Stepp hopper shall be heated by a 12volt forced air diesel burner system (490,000 BTU) or a liquid propane burner system (500,000BTU). The diesel burner system is available at no extra cost and is a much safer, more efficient burner system. The unit will burn less than 10 gallon of diesel per day. The burner system is controlled by a digital thermostat that has a range of 0-550°.

You can also heat the unit with optional overnight electric heaters. The overnight heaters are 2qty 220 volt 3kW heaters in the hopper and 1 qty 1.5 (1500watt) in the tack tank. Optional electric heaters will use the same thermostat as the diesel burner to maintain asphalt temperature.

Auger Delivery

Stepp will only build an auger delivery unit on our patch trucks for a couple reasons. With the oil jacketed hopper you are heating the material that in the auger trough. On the

chain conveyor systems the material can not be heated and is the material that is being dispensed for patch. The other experiences that we have had are that the chain conveyors are an area of maintenance due to the abrasive nature and the sticky nature of the materials that are used in asphalt hot box. The auger also “fluffs” or mixes the material as it is being dispensed giving you a nice consistent material.

Hydraulics

The PB loader uses a hydraulic system that requires the truck to have an electric throttle to operate certain hydraulic functions such as the auger, jack hammer, ECT. They also use a manual hydraulic valve with levers to operate the functions.

The Stepp unit uses a load sensing hydraulic system. This allows for the operation of every hydraulic function at a truck idle. This is the same type of hydraulic system used on most of the snow plow trucks in the US. The unit shall have a constant mesh mechanical PTO with a Force America load sensing hydraulic system. The unit shall also be equipped with a Force America Add-A-Fold valve that is operated with a switch in the operators control box. The valve will also have a manual valve handle to operate the valve sections in case of electrical malfunction.

The main discharge auger shall have a 2 speed motor and the anti bridging breaker shall have a hydraulic cylinder that will swing right and left.

Hydraulic power beyond and dual hydraulic hose for a hydraulic jack hammer are optional equipment.

Emulsion Tank

The PB loader has a direct fired tack tank. This can damage the materials and requires an additional burner system for the tack tank. The tank is external of the hopper and is really an afterthought of the hopper.

The Stepp emulsion tank shall be heated with a coil that has the heat transfer oil circulated through it and shall be temperature regulated with a digital thermostat that controls an air actuated ball valve to start and stop the heating oil flow through the coil. Heat transfer oil heated is the smoothest even heating available and eliminates scorching of the material.

The tack tank is insulated with 2” high temperature insulation and has a bottom cleanout sump. The tanks shall be integrated on the curb side of the hopper.

The tank has an 80 gallon capacity and has a 2” overflow/vent. The emulsion tank and spray wand shall be accessed from the ground from the rear of the unit. The emulsion tank is integrated into the side of the hopper. The tank will have a recirculating flange to insert the wand to keep the material flowing through the wand. The wand will be 48” and will have a 20’ hose with automatic rewind hose reel.

The tack system shall have a positive displacement, hydraulically driven pump. The pump will have spray and suck back capability and include a 5 gallon solvent flush tank

Outlined in the above is only a handful of reasons that the Stepp STPH patch has engineered the unit for operator safety, ease of use and durability. Overall the Stepp STPH line of patch bodies are build tough to handle the everyday wear and tear that a patch crew puts on the unit. We have built the STPH since 1984 and our customers loyalty is second to none on our patch truck and many of our customers have repurchased our units when they have reached their life cycle. Many of the original units that we have built are still in service and have seen a secondary market with contractors. If you have any questions or would like some references please feel free to contact us at 651-674-4491.