

PENNELLI PATCHING MACHINE



EQUIPMENT

PENNELLI ROAD PATCHING MACHINE is an innovative equipment suitable for the repairing of road surface (holes and breaks in surface).

The equipment is able to mix at the right proportional quantity the bitumen and the crushed stones, by allowing a **fast intervention with no wastage**.

The vehicle, in fact, separately transports the bitumen and the crushed stones and mixes, at the right proportions, just the quantity necessary for the intervention by avoiding useless wastage.

As special additives are mixed to the bitumen, it is no necessary to use a road roller by completing the intervention within few minutes.

Aggregate hopper can contain the daily quantity to patch. The possibility to fill the holes in cold temperatures means that the operator should not wait for the nice weather to start working.

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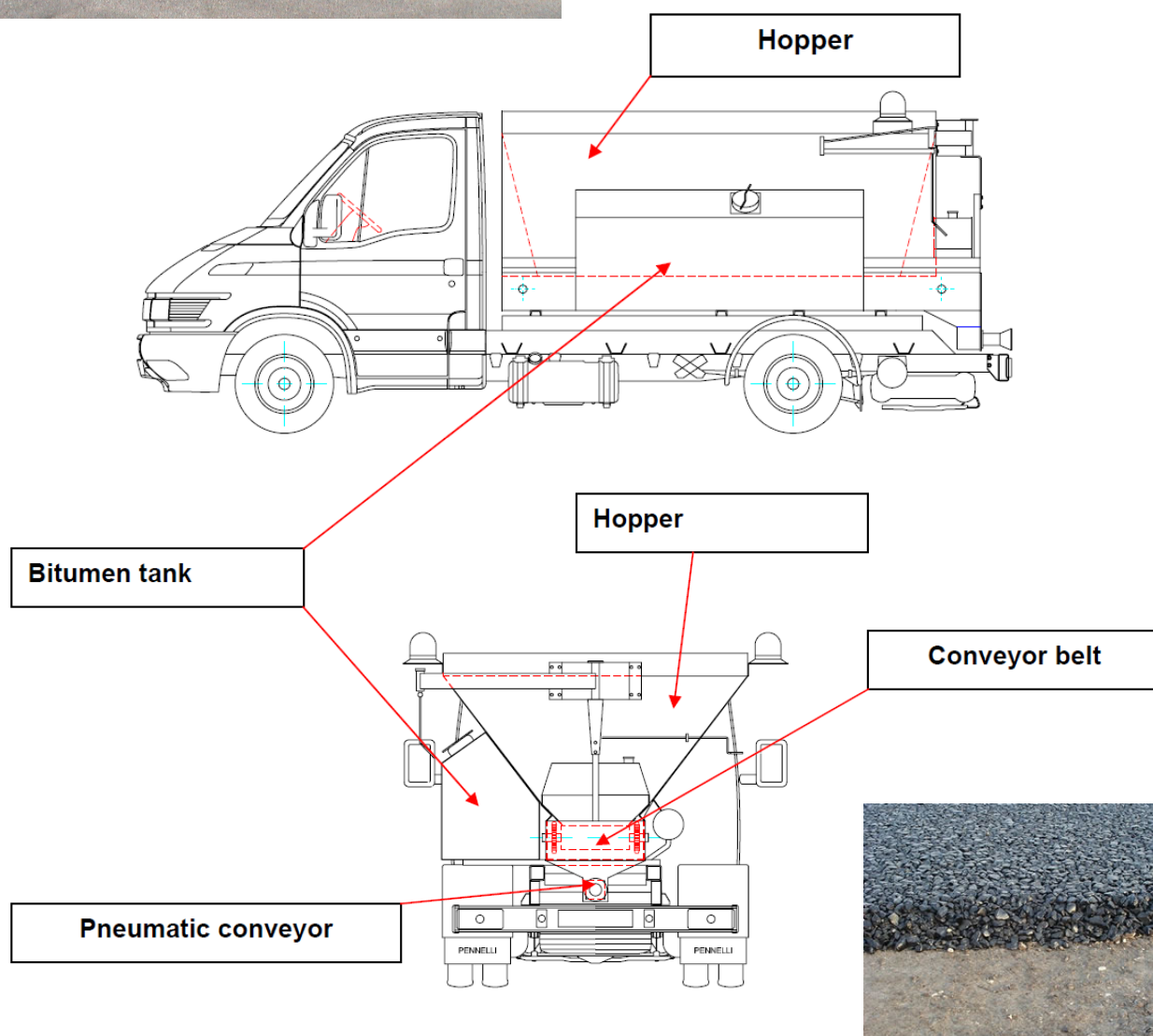
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Therefore, costs and time of the services are reduced and saved.

APPROX. DATA SHEET OF THE STANDARD UNIT ON LIGHT VEHICLE



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WORKING

How to patch a hole:

The patch spray system consists of four phases:

1. First of all it is necessary to clean the hole or the road crack by means of a high duty blower
2. Then, by the same nozzle, it is sprayed a pasting coat of hot asphalt emulsion inside the area to be treated;
3. Aggregate and hot asphalt emulsion are combined with forced air and put inside the hole. The proportioning system of the compost, allows to level the compost by obtaining a perfect filling of the hole.
4. Finally, by acting on the regulating valve, it is applied an upper coat of aggregate. The traffic can immediately start again.



The whole process requires a few minutes for the completion and traffic can immediately restart.

The equipment allows a road patch by spray system durable in time, safe and with reduced costs.

The patching machine is a good unit which allows to carry out by itself all the operations of road maintenance compared to the traditional system (which uses more vehicles); it cleans the surface to be treated, sprays coats of asphalt inside the hole, sprays asphalt and aggregate mixed together to fill and repair the hole, and finishes the work with a coat of aggregate.



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STRUCTURE

PENNELLI patching machine is composed of the following parts:

HOPPER

It contains aggregate, small crushed stones, truncated pyramid shape made of carbon steel Fe 410 B thickness of mm. 3, press-bended and electric welded, of suitable capacity according to the G.V.W. of the truck; the aggregate material unloading is carried out by gravity and at the rear lower cradle part, fitted with door and regulating gate.

CONVEYOR BELT

It is connected to the lower base of the hopper, hydraulically driven, for the crushed stones conveyance;

PNEUMATIC CONVEYOR

The system uses the pneumatic conveyor for the proportioning and conveyance of the small crushed stones inside the distribution piping.

BITUMEN TANK

It is made of steel sheet, located at the side part of the hopper or at rear of the cab (according to the necessary capacity and the vehicle features), with outside insulating of rock wool, aluminium sheet coating, heating system to fluidize the bitumen, complete with connections to the unit, upper loading hole, lower unloading hole with ball valve and plug, lower connection to the bitumen pump with overpressure by-pass, emulsion level indicator and temperature gauge for bitumen and water.

Bitumen tank is insulated in order to avoid a thermic dispersion outward; the heating system of the tank, which uses the engine heat, allows to prevent the aggregate freezing inside the hopper. It is available a system of electrical heating to keep the bitumen warm and ready to be used when the vehicle is parked in the garage.

COUNTER-CHASSIS

The hopper and the other components are mounted on a heavy steel counter-chassis, type Fe 510 B thickness mm 6, connected with the chassis of the vehicle according to the instructions of the truck manufacturer.



UNITS

HOPPER UNLOADING MECHANICAL UNIT

The unit includes a conveyor belt, located at the lower part of the hopper to convey the crushed stones to the delivery hose, rollers, abrasion resistant rubber mat, regulating stretchers for the mat. The belt is driven by hydraulic gear-motor.

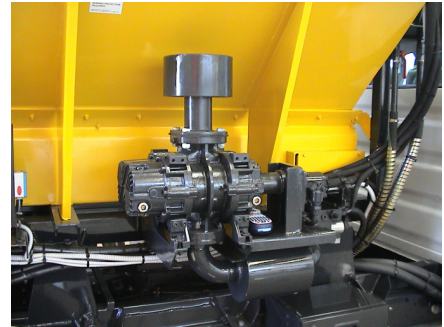
The pneumatic unloading is carried out by means of

blower with hydraulic with gear motor
connected with the suitable Power Take Off.



PNEUMATIC CONVEYOR UNIT

The convey of air compressed is carried out by a blower RBS 35/V, having the following features: 1 bar pressure, capacity 4166 lt/1' at 3000 r.p.m, power 13 CV, suction/delivery hole of 80 mm.



HYDRAULIC UNIT

The hydraulic unit is provided with a suitable high yield gear pump and driver by PTO connected with the gearbox, an oversized hydraulic tank to ease unloading of the excess of heat, radiator for the oil hydraulic cooling, high yield hydraulic gear motor for the bitumen pump, blower, reducer of the conveyor belt, distributors, safety valve, and other accessories.



DRIVE UNIT

The PTO unit connected to the gearbox gives the necessary power to the hydraulic pump, to drive all components of the equipment.

The unit is driven by a pneumatic control inside the cab and the switching off is automatically carried out when the vehicle re-starts and the operator acts on the clutch. For the model of the equipment assembled on a trailer, the hydraulic pump drive and of all services can be carried out by a suitably powered diesel auxiliary engine, sound proof, which replaces the Power Take Off unit.

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THERMIC UNIT

The unit to heat bitumen uses the water temperature of the radiator (just 40°C are enough to keep bitumen as fluid), and it is fitted with suitable water pump in bronze, 20 lt/1' at 1500 r.p.m. with box of 20 lt, coil, for the thermal heat transfer. As optional item, there is the possibility to keep bitumen warm by an electrical system.

For the model of the equipment mounted on trailer, the bitumen heating is carried out by a stainless steel boiler with burner.



PIPELINE CLEANING UNIT

PENNELLI patching machine is fitted with a bitumen fluidization system by gravity with ball interception valve which allows the cleaning of the bitumen pipeline when the work is finished. The unit is also provided with a diesel tank of 20 lt connected with the suction line of the bitumen pump.

PROPORTIONING ARM

It is applied at rear side of the vehicle, hinged with supporting brackets of the flexible hose of 3" for the concrete delivery and flexible hoses of 3/4" for the bitumen delivery, no.6 spraying nozzles at the edge ring located with recycle device and discontinued spraying.

The flexible hoses is guided by the operator by a suitable handlebar with start pushbutton panel for:

- bitumen pump;
- compressor;
- conveyor belt
- proportioning



CONTROL PANEL

The control panel for the general starting of the whole equipment is located at the right side of the vehicle, in a suitable IP65 tight box, with inspection door fitted with plexiglass porthole and key locked.

The control panel includes the following controls:

- supply warning light (green colour);
- compressor clutch;
- equipment working hour-counter
- auxiliary electric heating control
- other controls

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ACCESSORIES

The patching machines also includes:

- tool box
- yellow light flasher
- Ladder to access to hopper
- Arrow safety panel at rear.



OPTIONAL ITEMS

- Front-mounted arm with remote control
- One operator driving system
- Stainless Steel Hopper
- Salt spreader
- Various accessories according to the market needs.
- Compaction roller, removable with pneumatic control



- Top mounted dust protection cover



- re-assembling of spare wheel, where possible

- Light signal panel with remote control



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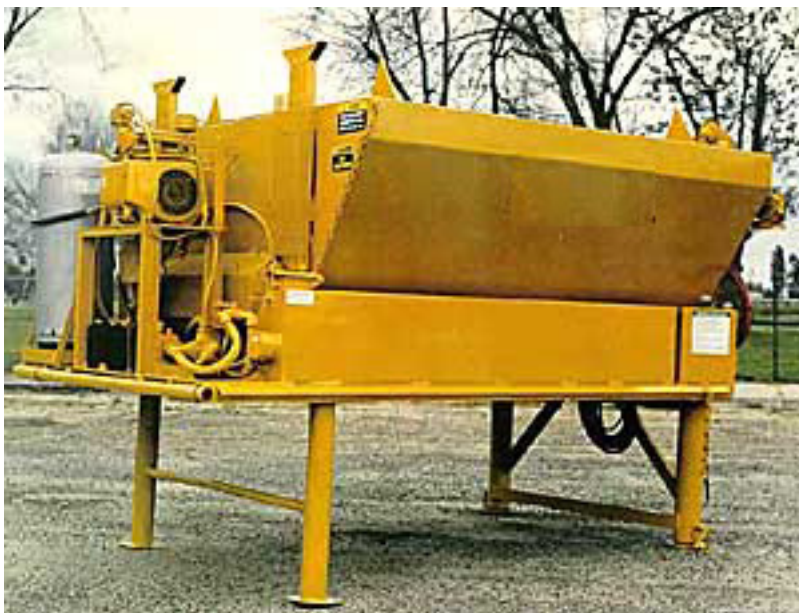
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- VERSION ON TRAILER



- HOOK LIFT VERSION



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