

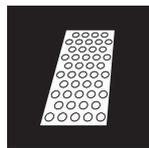
PHOTOS MAY SHOW OPTIONAL OR CUSTOMISED EQUIPMENT.



Double basic line



Dots



Dot'n line



Longflex



Edgeflex



Chess

## SPRAY PLASTIC AND DOT'N LINE APPLICATION

The BM 5000 series provides you with a variety of high capacity line marking machines designed for large scale jobs such as marking highways, motorways or airport runways.

The material tank capacity can be up to 710L. The possibility of large material capacity naturally gives fewer stops during the day for refilling.

The BM 5000 has a two-seat slidable drive and operator section for flexible working on the left or right side.

Depending on the equipment, the machine can apply both flat and profiled markings, single and double lines of different widths, as well as for simultaneous application of continuous and interrupted lines.



# TECHNICAL SPECIFICATIONS

<b>ENGINE</b>		■ ■ ■ ■ ■ ■
Manufacturer	Kubota	
Type	Turbo (Diesel)	
Cooling	Water	
Cylinder	4 stroke 3800 cm <sup>3</sup>	
RatedPower	74 KW	
Approval	EU Stage IIIA resp. TIER 3	
<b>COMPRESSOR</b>		■ ■ ■ ■ ■ ■
Compressor Capacity	Choice of 1-2 compressors can give 1800 - 3600 L/min @ 10 bar. Integrated oil-cooling system. Air-cooler incl. water separator	
<b>FILLING CAPACITIES</b>		■ ■ ■ ■ ■ ■
Fuel tank capacity	180 L (2 x 90 L) - Diesel	
Hydraulic tank size	93 L	
Bead capacity	330 L (2 x 165 L). Pressurized (max 3 bars)	
<b>MATERIAL TANK</b>		■ ■ ■ ■ ■ ■
Material Tank	445 L, 585 L, or 710 L	
<b>DRIVING PROPERTIES</b>		■ ■ ■ ■ ■ ■
Drive angle	12.5 degrees / 22% (low gear 7200 kg)	
Turning radius	4.90 m.	
Steering	Dual torque steering	
<b>TRANSMISSION</b>		■ ■ ■ ■ ■ ■
Hydrostatic transmission	For variable speed	
Speed	Low gear 0-12 km/h, high gear 0-24 km/h	
<b>ELECTRICAL SYSTEM</b>		■ ■ ■ ■ ■ ■
Electrical system	12 V / 150 Amp	
<b>CONTROL UNIT</b>		■ ■ ■ ■ ■ ■
Borum LineMaster	Program up to 99 different line types. Organise lines in up to 30 marking programs. 8" display. Transfer of daily marking reports. Data about road marking jobs can be accessed online (optional).	
<b>COLOUR</b>		■ ■ ■ ■ ■ ■
Colour	RAL 1007 (Other colours available on request)	
<b>DIMENSIONS</b>		■ ■ ■ ■ ■ ■
Width	1300 mm	
Height	2250 mm (Without Beacon)	
Length	5910 mm	

# THERMO SPRAY APPLICATION (PUMP)

The thermoplastic spray application equipment works via a pump. The amount of the applied material is set by the pressure of the pump and the air pressure of spraying, but the pump can also be adjusted to the speed of the machine.



## SPRAY-PLASTIC PUMP

Spray-plastic pump operates with a non-pressurized material tank. The pump consists of a hydraulically driven motor, gearbox, clutch, highly durable rotors and pump house. The pump housing is oil-jacketed and isolated. Capacity up to 80 L/min. at 8.5 bar.

The hydraulic control valve adjusts the quantity of spray-plastic material according to the speed of the machine in order to obtain a constant layer thickness.

The application speed for doing spray-plastic can go up to 15 km/h.

## ADVANTAGES WHEN USING A SPRAY PUMP SYSTEM:

- \* The ability to quickly adjust the pressure while driving (controlled in the LineMaster).
- \* Easy filling of thermoplastic due to the lid of the non-pressurized tank being larger compared to the pressurized tank.

## GUN FOR SPRAY-PLASTIC APPLICATION

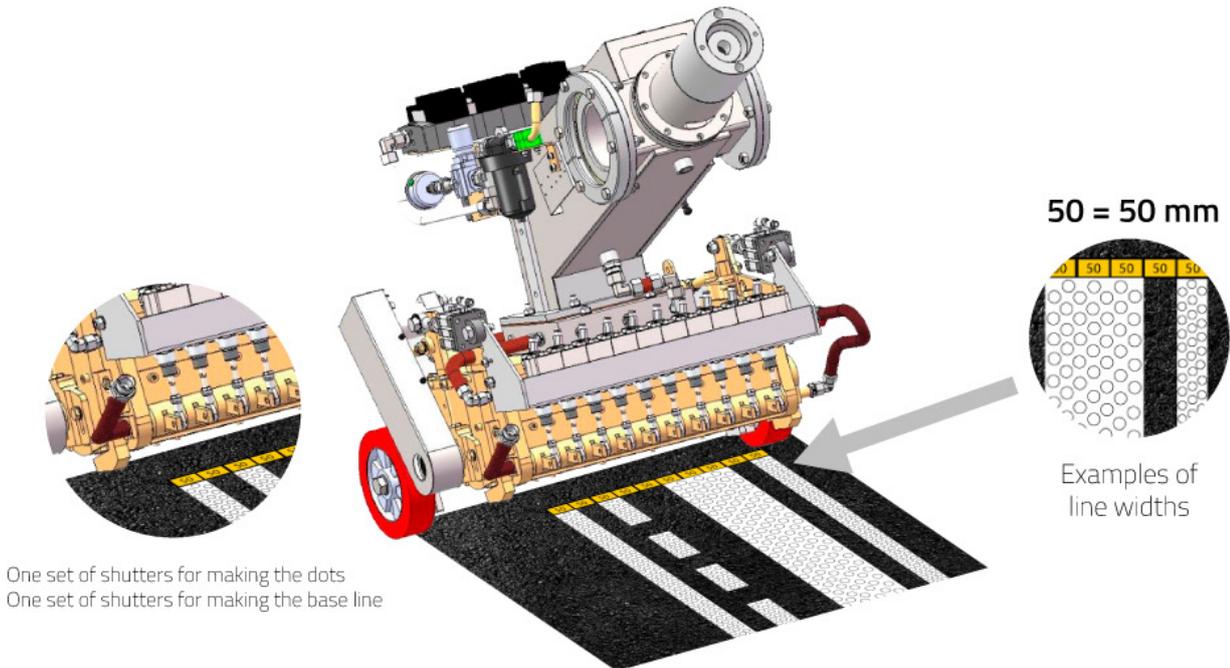
Automatic high-capacity spray plastic gun. Consists of an oil jacketed gun body and a pneumatic cylinder. Possibility to apply line widths ranging from 10 - 20 cm depending on line thickness, work conditions, application speed and layer thickness. As an alternative, we offer a narrow nozzle, which can spray 5- 15 cm with one gun. Optional narrow nozzle size of 3 mm or wide nozzle size of 7 mm.

The guns are mounted on a sliding retainer frame, on which 1-3 spray guns and 1-3 bead guns are attached. Easily slidable from side to side for an optimal working position. Ground distance is maintained by retainer wheels to ensure a constant road marking width. All material pipes are oil-jacketed and insulated to maintain an ideal material temperature. Lifting of retainer from operators seat using a hydraulic cylinder.

Sliding retainer frame, on which 1-3 spray guns and 1-3 bead guns are attached. Easily slideable from side to side for an optimal working position. Ground distance is maintained by retainer wheels to ensure a constant road marking width. All material pipes are oil-jacketed and insulated to maintain an ideal material temperature. Lifting of retainer from operators seat using a hydraulic cylinder. The application speed can go up to 15 km/h.

# THERMOPLASTIC DOT'N LINE EXTRUDER

The Dot'n line system offers a three-in-one solution for thermoplastic markings. This equipment can apply flat lines, dots and unique combination of lines and dots using only one extruder head.



One set of shutters for making the dots  
One set of shutters for making the base line

50 = 50 mm

Examples of line widths

In the drawing you can see examples of different valve set-ups giving different widths. The total line width can be between 30-50 cm depending on the set-up. The line width starts at 5 cm and can be built up to 50 cm with 5 cm standard shutters.

By using two sets of shutters the base line has time to cure slightly before the Dots are applied. Consequently, the Dots will settle on top of the line with sharp edges, securing the optimum retro-reflection.

The diameter of dots can be chosen between  $\varnothing 18$  and  $\varnothing 45$  mm depending on the chosen drum. The number of dots/meter is 15-35 dots and is controlled by the LineMaster.

The shutters have no contact with the high tensile steel drum and therefore wear is minimized and lifetime is prolonged.

Effective heating of the complete unit using a centrifugal pump, 42 L/min, hydraulically driven.

Pneumatically controlled quick cleaning system for removal of solids left in the extrusion slot. It can be activated while extrusion is in process and is only slightly detectable on the line in the form of a moderate thickening of the layer.

Continuous circulation of the thermoplastic material inside the equipment. This avoids settling and catching of solid parts and prevents unnecessary wear of mechanical parts.

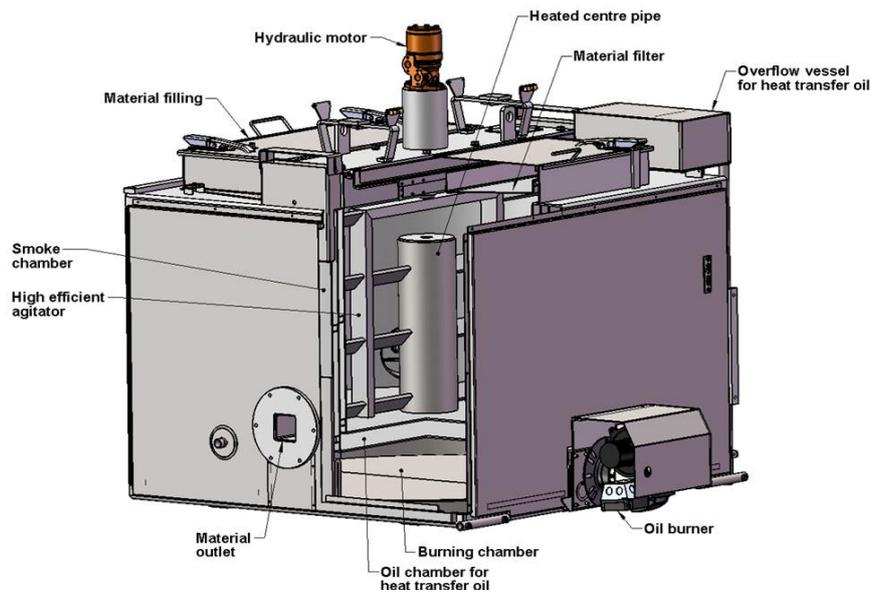
The application speed depends on the type of application and goes up to 6 km/h.

## AUGER SCREW PUMP WITH CONTINUOUS RECIRCULATION SYSTEM

The transport of material from tank to Dot'nLine head is done by a hydraulically driven auger screw pump, which is electronically controlled. The screw pump has a permanent thermoplastic re-circulation system, which ensures a constant flow also past the inactive extrusion shutters, keeping solid parts from settling and keeping the equipment ready for working.

Build-in pressure regulating system ensures that line width and thickness do not change no matter the number of shutters involved in the current marking assignment.

# NON-PRESSURIZED THERMOPLASTIC TANK



Non-pressurized thermoplastic tank, indirectly heated via heat transfer oil. The thermal oil and thermoplastic material temperature is thermostatically controlled and regulated automatically according to the settings

## BURNER SYSTEM

Diesel burner system for heating of the thermal oil (and thermoplastic). Propane burner is available on demand.

## VERTICAL AGITATOR (MIXER)

With hydraulic transmission. Heated center pipe for efficient uniform temperature control. Perfect melting & homogenization of the thermoplastic. Stable construction with foundation and bearings at the top of the material tank.

## LINEMASTER FEATURES

The Borum LineMaster control unit is an easy way of setting and controlling your line marking jobs. The LineMaster is attached to the operator's section of the machine and gives you full control of all your line marking tasks, from line application and pre-marking to reporting and invoicing.

It is possible to store up to 99 different line types, and to arrange these in up to 30 different marking programs. You are also able to pre-set line widths, line types and different combinations to have them ready for marking, and can instantly adjust them on the go.



Furthermore, you are able to view the status of various parts of the machine (e.g. compressor) on the computer screen that will help with correctly maintaining the machine and avoiding break downs.

## ADVANTAGES OF THERMOPLASTIC SPRAY EQUIPMENT

The spray plastic application equipment that works with a pump gives you the possibility of quickly adjusting the pressure while driving. Our LineMaster may also to a certain extent do this automatically. Furthermore, filling and thermoplastic filtration is easy, since the tank lid is larger than the one on the pressurized tank. Sprayed thermoplastic forms a uniform application that is more durable and dries faster compared to cold paint applications.



## THERMOPLASTIC DOT ADVANTAGES

Having numerous dots in a line gives the light a lot of possible areas to fall onto and create a retro-reflective effect. This is essential for having clear visibility, especially while driving during night time.

The drainage effect of the profiled markings ensures that rain water will easily drain away from the lines, thus maintaining high reflective values in rainy weather.

This is possible because of the structure that allows the water to drain. Furthermore, the profiled nature of the road marking produces a noise when driven over that will warn the driver against driving off the road.



### TYPICAL USES:

Dot'n line is generally used on roads with high traffic and low night visibility as highways and motorways.



### LEARN MORE

Find out more in the Borum Knowledge Lab.

# ADDITIONAL EQUIPMENT

The additional equipment can be mounted on the machine according to your requirements. They are not necessary for the running of the machine but add to the comfort of the machine driver or to the functionality of the machine.



**Pre-marking system with paint can**



**BM Online**



**Air drier for bead tank**



**Bead alarm mounted on bead gun**



**Pointer turning with steering**  
With hydraulic lifting system



**Bar with pneumatic lift for mounting warning lights**  
(Comes without lights)



**Cone holder**



**Quick shift**



**Cruise control**



**Sunshade with 1 rotating light**



**Pre-marking system with paint gun**



**Airknife**



**Ejector filling of bead tank**



**Fixed pointer**  
With hydraulic lifting system



**Hydraulic broom**