



PHOTOS MAY SHOW OPTIONAL OR CUSTOMISED EQUIPMENT.



Double basic line



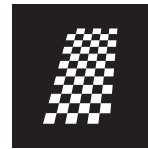
Double basic line



Longflex



Edgeflex



Chess



Single basic line

## SPRAY PLASTIC AND EXTRUSION 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 780L. 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.

# KNOWING THE BM 5000

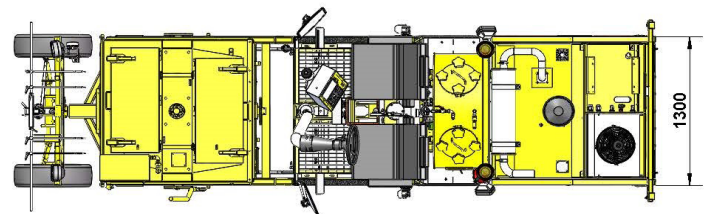
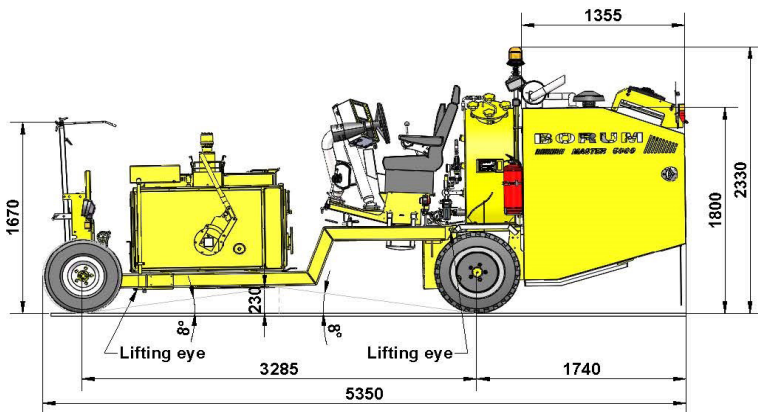
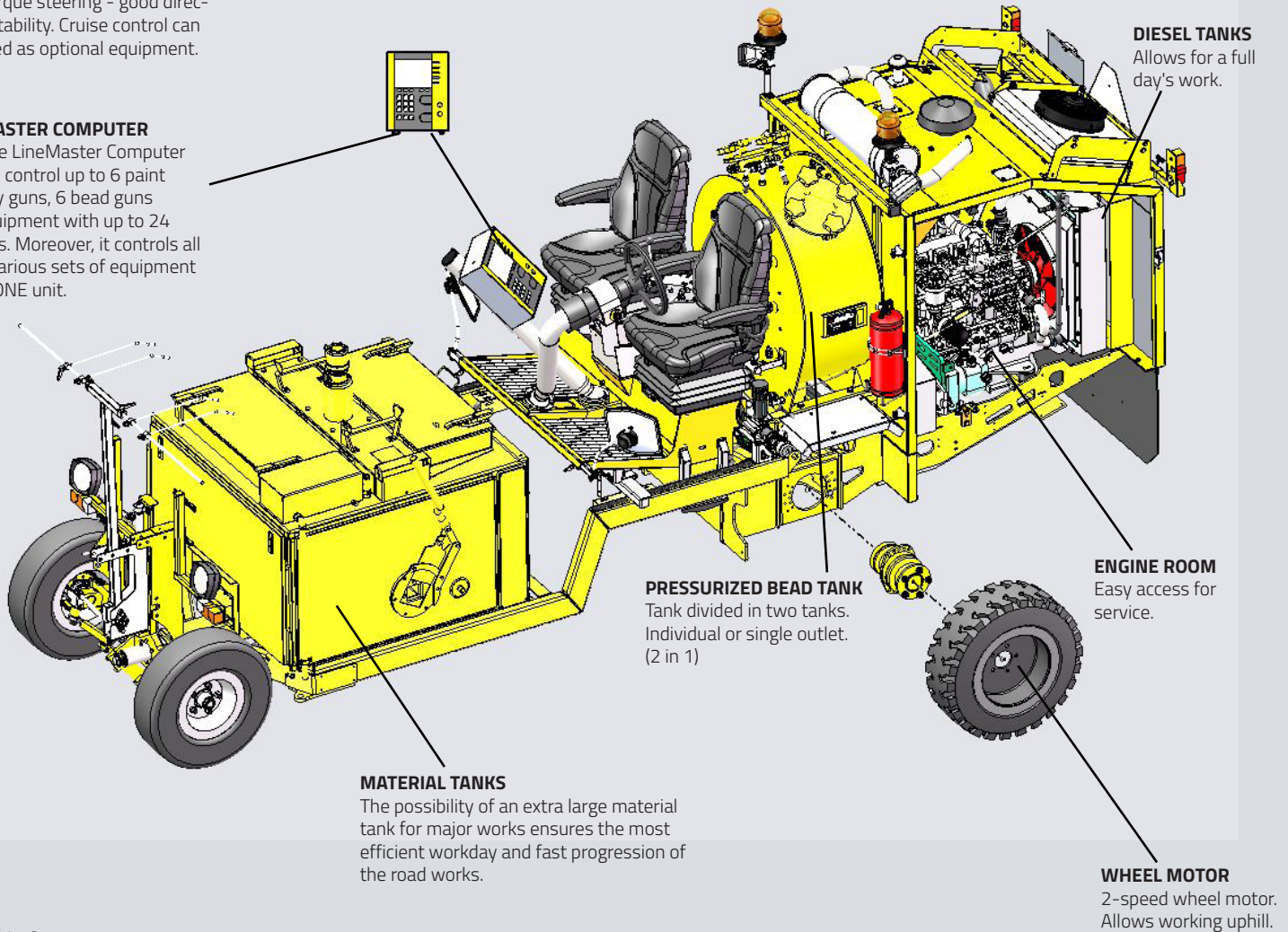
## OPERATOR SECTION

Quick and easy change from side to side for marking left and right. Dual torque steering - good directional stability. Cruise control can be added as optional equipment.

## LINEMASTER COMPUTER

With the LineMaster Computer you can control up to 6 paint or spray guns, 6 bead guns and equipment with up to 24 shutters. Moreover, it controls all these various sets of equipment in this ONE unit.

## FULL REAR VIEW





# TECHNICAL SPECIFICATIONS

## ENGINE

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

## COMPRESSOR

Compressor Capacity	Choice of 1-2 compressors can give 1800 - 3600 L/min @ 10 bar. Integrated oil-cooling system. Air-cooler incl. water separator
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## FILLING CAPACITIES

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)

## MATERIAL TANK

Material Tank	450 L, 630 L, or 780 L
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## DRIVING PROPERTIES

Drive angle	12.5 degrees / 22% (low gear 7200 kg)
Turning radius	4.90 m.
Steering	Dual torque steering

## TRANSMISSION

Hydrostatic transmission	For variable speed
Speed	Low gear 0-12 km/h, high gear 0-24 km/h

## ELECTRICAL SYSTEM

Electrical system	12 V / 150 Amp
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## CONTROL UNIT

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).
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## COLOUR

Colour	RAL 1007 (Other colours available on request)
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## DIMENSIONS

Length	5350 mm
Width	1300 mm
Height	2250 mm (Without Beacon)

# THERMOPLASTIC SPRAY APPLICATION (PRESS. TANK)

The thermoplastic spray application equipment works via a pressure tank. The amount of material that is put on the road is set by the pressure of the tank and the air pressure of spraying. This offers you an easy to use the system.



Sliding retainer frame, upon which 1-3 spray guns and 1-3 bead guns can be attached. Easy slidable from side to side for an optimal working position. Ground distance is maintained by retainer wheels hereby ensuring a constant road marking width.

Lifting of retainer from operators seat is done using a hydraulic cylinder.

All material pipes are oil-jacketed and insulated to maintain an ideal material temperature.

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

Line thickness is typically between 0.75 mm to 1.5 mm.

Marking speed up to 15 km/h depending on the work conditions, operator, etc.

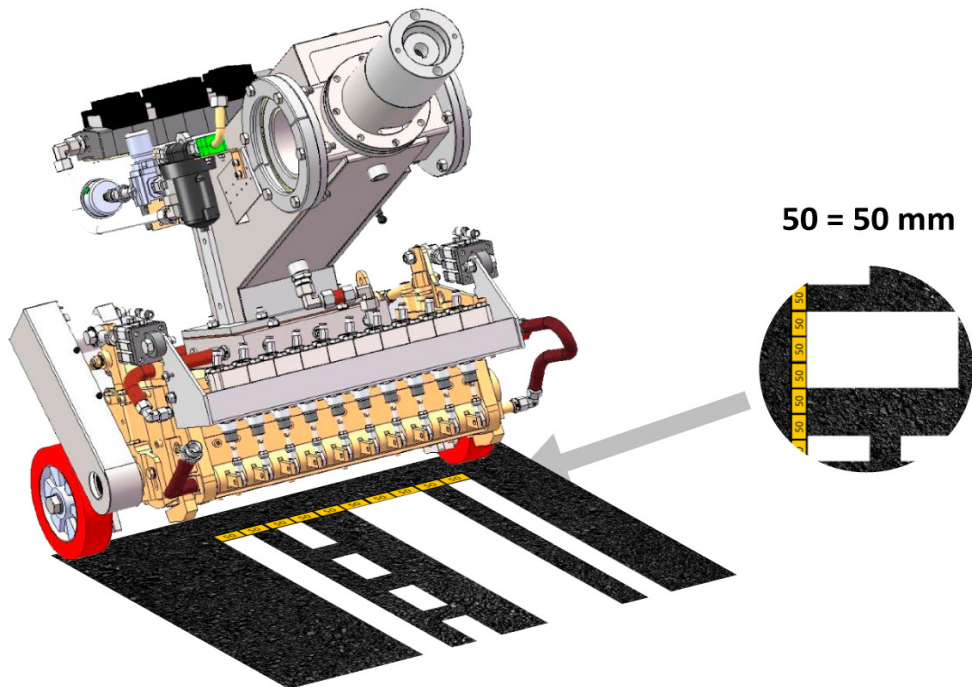
## GUN FOR SPRAY-PLASTIC APPLICATION

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.

# THERMOPLASTIC EXTRUDER

The working principle of the extruder lies in the extrusion of the hot thermoplastic material through the extruder shutters onto the road surface. This allows to switch between line types in seconds with a push of a button. No need for mechanical adjustment. The thickness of the line is controlled by the slot gap and the speed of the machine, coupled to the thermoplastic feed rate.



Glass beads can be pre-mixed and/or automatically applied with glass bead guns.

You can choose between thermoplastic extruder of 30, 40, or 50 cm in total line width, built-up with 5 cm standard shutters (alternative shutter dimensions in the range of 4-10 cm for alternative line widths).

Effective heating of the complete unit using a centrifugal pump, 42 L/min, hydraulically driven. This ensures optimal performance and that the material does not stiffen and set inside the equipment.

Pneumatic lifting cylinder for up/down function, operation controlled from operator's seat.

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.

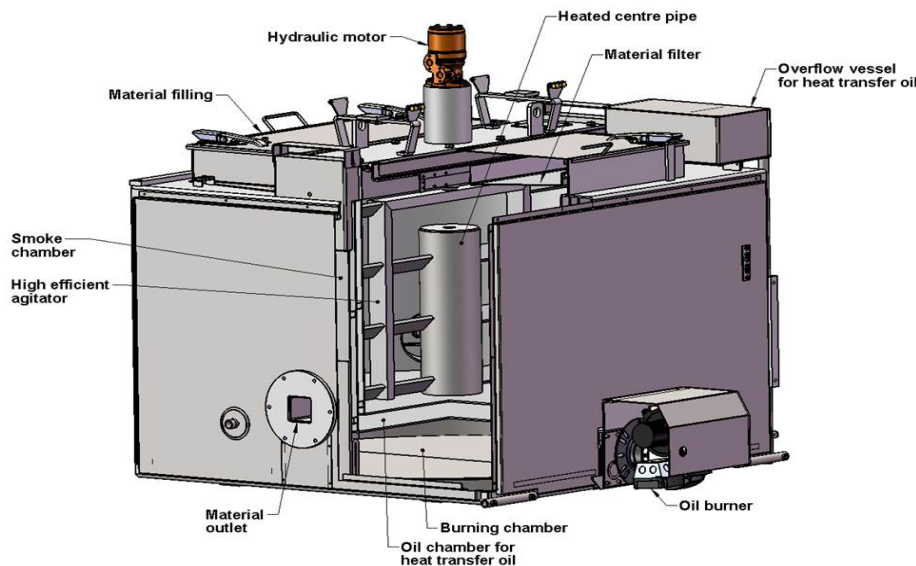
The application speed varies according to the material, line type and width. Usual working speed is 3-6km/h but can go up to 8 km/h for some lines. Speed-dependent settings are possible.

## AUGER SCREW PUMP WITH CONTINUOUS RECIRCULATION SYSTEM

The transport of material from tank to extruder head is done by a hydraulically driven auger screw pump, which is electronically controlled. The screw pump has a permanent thermoplastic recirculation system which ensures a constant flow past the inactive extrusion shutters, keeping these clean and ready for opening. This avoids settling and catching of solid parts and prevents unnecessary wear of mechanical parts.

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

# PRESSURIZED MATERIAL TANK



Pressurized tank indirectly heated via thermal oil. The thermal oil and thermoplastic material temperature is thermostatically controlled and regulated automatically.

## BURNER SYSTEM

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

## VERTICAL AGITATOR (MIXER)

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

## ADVANTAGES WHEN USING A PRESSURISED TANK FOR SPRAY:

The line thickness is affected by the machine speed, this is useful for applying thicker lines in curves and areas with higher wear and tear levels. The maintenance for the pressure tank is minimal compared to the thermoplastic spray pump system.

## QUICK CLEANING

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 layer.

## 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.



## THERMOPLASTIC SPRAY ADVANTAGES

Due to the equipment working via a pressure vessel, it is very simple and easy to use as the pressure in the vessel is the same as the pressure in the application. Furthermore, the tank requires very little maintenance.

Thermoplastic spray markings are a cost-efficient solution as the applied lines do not require as much material as extruded profiled markings. Furthermore, this type of material forms a uniform application that is more durable and dries faster compared to cold paint applications.



## THERMOPLASTIC FEATURES

Thermoplastic is a durable material that cures quickly and adheres strongly to the road surface. It can be used for applications of both flat lines (also known as type 1 lines) or of thick profiled lines and markings (also known as type 2 lines).

This type of material is used on various types of roads, but you will often see it on highways or motorways as it can withstand high traffic density, it has a high visibility at night and during wet conditions and glass beads can be mixed in for enhancing visibility.



## TYPICAL USES:

Thermoplastic is generally used on roads with high traffic volume 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**



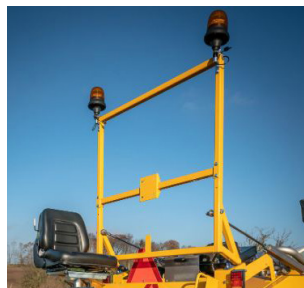
**Air drier for bead tank**



**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**



**Remote control for BM Line-Master**



**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**