



PHOTOS MAY SHOW OPTIONAL OR CUSTOMISED EQUIPMENT.



Single basic line



Single basic line



Longflex



Agglomerate

## 2-COMPONENT EXTRUSION AND AGGLOMERATE APPLICATION (98:2)

From city areas to urban and interurban roads, the BM 2000 can handle both smaller jobs and longer road stretches.

The BM 2000 CP T AG is an agile machine with excellent load abilities and a turning radius of only 3,2 m. It allows for paint tank capacities of 440 L or 2 x 220 L.

The BM 2000 has a one-seat slidable drive and operator section for flexible working on the left or right side.

The 2-component application equipment can be set to execute lines in widths between 10-30 cm. The equipment on this machine may be used for the application of flat lines and agglomerate markings.

# KNOWING THE BM 2000

## 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.

## CHASSIS

Solid double-frame construction

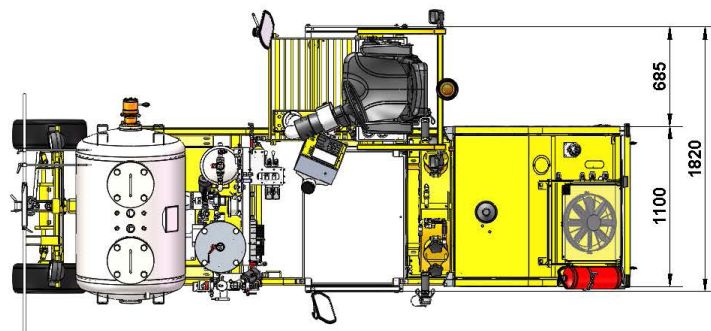
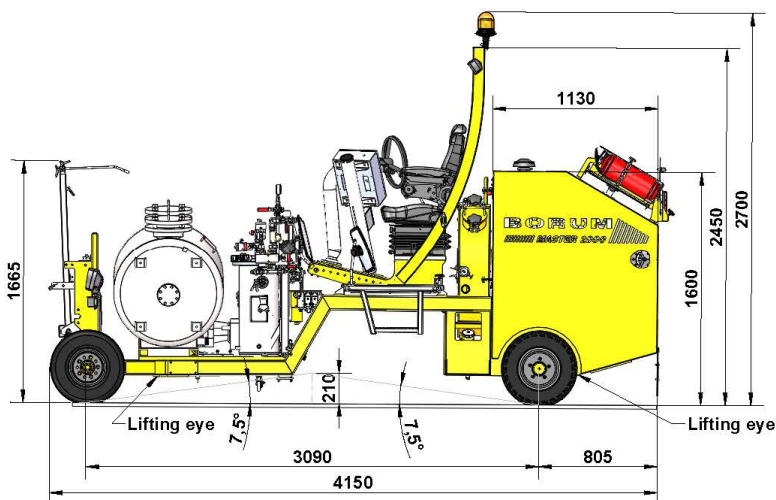
## MATERIAL TANKS

Possibility to choose between black steel and stainless steel tanks with capacities of 440 L or 2x200 L.

FULL REAR VIEW

ENGINE ROOM  
Easy access for service.

PRESSURIZED  
BEAD TANK



# TECHNICAL SPECIFICATIONS

ENGINE							
Manufacturer	Kubota						
Type	Turbo (Diesel)						
Cooling	Water						
Cylinder	4 stroke 2400 cm3						
RatedPower	44 KW						
Approval	EU stage IIIA (type V2403-M-T-)/US Interim TIER 4						
COMPRESSOR							
Compressor Capacity	Screw compressor. 1800 L/min @ 10 bar Integrated oil-cooling system. Air-cooler incl. water separator.						
FILLING CAPACITIES							
Fuel tank capacity	50 L (diesel)						
Hydraulic tank size	50 L						
Bead capacity	115 L/170 kg. Pressurized (max 1.2 bars)						
MATERIAL TANK							
Material Tank	440 L or 2 x 220 L						
DRIVING PROPERTIES							
Turning radius	3,2 m						
Steering	Dual torque steering						
TRANSMISSION							
Hydrostatic transmission	For variable speed, forward/backwards						
Speed	0-16 km/h						
ELECTRICAL SYSTEM							
Electrical system	12 V / 150 Amp						
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).						
COLOUR							
Colour	RAL 1007 (Other colours available on request)						
DIMENSIONS							
Length	4150 mm						
Width	1100 mm						
Height	2450 mm (Without Beacon)						



# 2-COMPONENT COLD PLASTIC (98:2) EQUIPMENT

## - GENERAL INTRODUCTION

Being equipped with an internal mixer for mixing of the paint and hardener and efficient cleaning system that is easily triggered from the machine's computer, the Borum 2-component cold plastic equipment is constructed to provide high-quality road markings.

### THE BORUM 2-COMPONENT COLD PLASTIC EQUIPMENT (LOW PRESSURE SYSTEM) CONSISTS OF:

1. Separate material tanks for:
  - Paint
  - Hardener or the paint and hardener
  - Mixer for blending the paint and the hardener. The mixing of the material is done internally, so it is not affected by external factors as wind etc., as for external mixing
  - Pressure valves digitally controlled by Borum Line-Master computer. No need for mechanical adjustment while marking



### LOW PRESSURE PUMP SYSTEM WITH INTERNAL MIXING FOR SECURING 98:2 RATIO

The pump system consists of a lobe type paint pump and gear type pump for hardener. The two pumps are driven by one hydraulic motor via chain and variable gearbox securing the 98:2 relation between paint and hardener.

The system is also equipped with a controller for performing the flushing of gun(s) and mixer.

### BORUM VARIO RETAINER FOR EASY EQUIPMENT SWITCH

The Borum Vario Retainer provides a unique possibility to interchange between applications in a very short time, with very few standard tools. When the work is done, the retainer and application equipment can be easily stowed under the machine. The retainer makes it possible to use all application equipment in different positions on the machine.

Easily slidable from side to side for an optimal working position. Ground distance is maintained by retainer wheel to ensure a constant road marking width.

### ALARMS

- Alarm when hardener does not flow during marking work. This helps to avoid non-cured markings to be applied
- Alarm when there is a break in the marking works which is longer than set in the computer. This notifies you to clean the system before material cures inside the equipment.



# THIS MACHINE IS EQUIPPED WITH

## 2-COMPONENT COLD PLASTIC (98:2) EXTRUDER

The extruder is ordered for the specific line width. The line width can be 10-30 cm and the line thickness can be set to 1-3 mm (ribs/profiles can be up to 10mm depending on the material).



The extruder head is provided with a quick connector to the mixer head for easy exchange of equipment. The extruder is also provided with a pneumatic cylinder with cleaning arrangement.

The extruder is ordered for the specific line width. Available line widths are 10, 12, 15, 17, 20, 22, 24, 25, 30 (4, 5, 6, 7, 8, 8.5, 9, 9.5, 10, 12 inch.) Provided with quick connector to the mixer head for easy exchange of head.

Usual marking speed is between 2-6 km/h depending on work and weather conditions, operator experience, etc. Faster application speeds can be achieved.

Recommended paint viscosity for extruded lines is higher than 6500 cp and for ribs is higher than 8500 cp.

Fitting and exchanging the Borum 2-Component Extruder with other 2-component equipment, such as Dot or Agglomerate, can be done in less than 2 minutes, without the use of tools.





## 2-COMPONENT 98:2, AGGLOMERATE APPLICATION

The agglomerate equipment (a spike roller) is mounted under the 2-component extruder, which is slightly wider than the roller (flex shutters).



The line width can be up to 30 cm, the line thickness can be up to 4 mm, and the line type is stochastic structure. The equipment can apply markings at a speed of up to 5 km/h depending on the conditions, e.g. material, line type and operator experience. Recommended paint viscosity is above 8000 cp.

The Borum 2-component agglomerate is a very flexible one-size unit, made for fitting under any Borum 2-component extruder.

The Borum 2-component agglomerate is made to be flexible and easy to use. Once the brackets are placed on the extruder, any mounting and unmounting can

be done in less than 5 minutes without using tools at all. Adjusting the equipment to make the exact marking needed is very simple. Once it is done, mounting and unmounting is Click-on/Click-off.

The agglomerate application on the road is controlled from the Borum LineMaster.

If the spikes on the agglomerate roller need to be thoroughly cleaned, it is easily done by shifting two levers. This allows the spike roller to be put into a bucket with solvent. Overall, the cleaning process does not require any tools to be completed.

### AS AN OPTION YOU CAN ALSO ADD ONE OF THE FOLLOWING APPLICATION EQUIPMENTS

#### 2-COMPONENT 98:2, AGGLOMERATE APPLICATION (STRUCTURED MARKING)

Agglomerate needle roller available in a standard width of 30 cm (12"). It must be mounted under the extruder unit. Line size depends on the extruder.

#### 2-COMPONENT 98:2, DOT APPLICATION (STRUCTURED MARKING)

For marking 2-component dotted lines. Available line widths are between 10-30 cm (4-12 inch)

#### 2-COMPONENT SPRAY 98:2

The machine can be supplied with one or two spray guns and the possibility to apply line widths of up to 20 cm (8") per gun. Please notice that restrictions apply when 2 guns are mounted.

\*NB! There are limitations when using the same machine for both sprayed and profiled applications:

- Thorough cleaning of material tanks is needed when changing material
- The pump will be worn when using the rougher material for profiled markings, so after a while, the pressure will not be sufficient for a proper result with spray.

# PRESSURIZED STAINLESS STEEL TANK



## PRESSURIZED MATERIAL TANK FOR 2-COMPONENT

Pressurized material tank and filters in stainless steel for water and ammonium based paints. Option for black steel tanks.

The material tank has a filling system with two filling holes. This makes the filling process very easy to manage.

## AGITATOR (MIXER)

Driven by hydraulic motor and with manually operated reversing valve.

## EASY-TO-USE CLEANING SYSTEM

The cleaning system is formed by a solvent tank for cleaning of mixer-head, hoses and paint guns. The system is activated via the Borum LineMaster computer. The cleaning is an automated preset sequence ensuring the correct valves are opening/closing.

36L (79 lb wt.) pressure solvent tank for cleaning of mixer-head, hoses and paint guns.  
Stainless steel, max 8,5 bare (123 psi)

NB! When working with 2-component whenever the application is stopped, application equipment has to be cleaned from the cold plastic mixture within a few minutes.

## 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 breaks down.



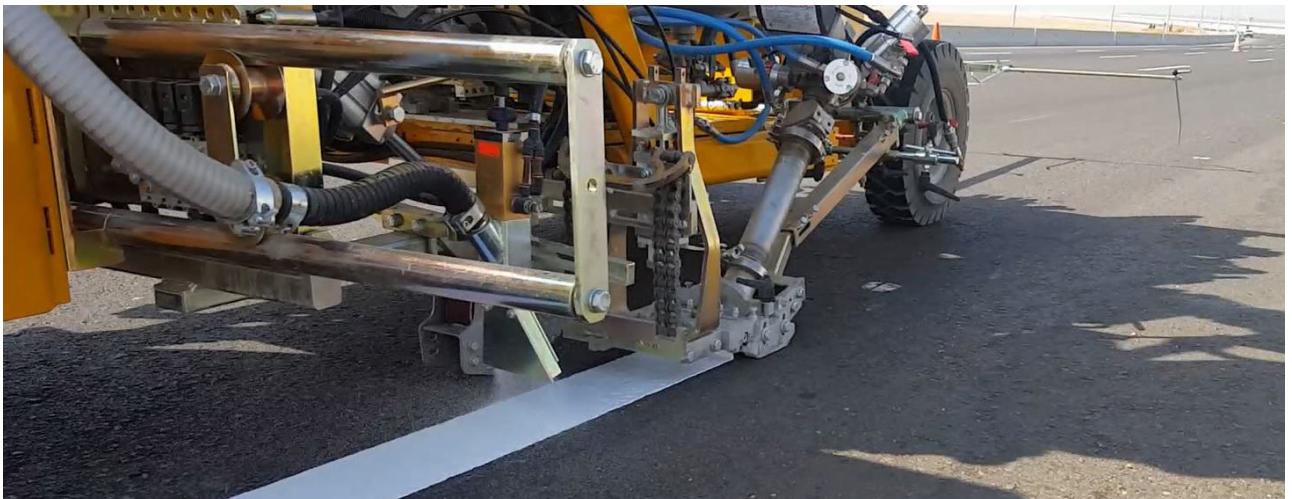


# 2-COMPONENT MATERIAL ADVANTAGES

The 2-component application material is a great solution for ensuring reliable line markings in areas with dense traffic. With 2-component material, you get a wear-resistant road marking with good visibility, durability and little dirt pick up.



The challenge with 2-component cold plastic material is that once it is mixed it needs to be applied on the road right away. Even though Borum machines are designed to mix the materials as late as possible in the application process, you will need to pay attention to the time frame you have, before the material cures inside the machine / equipment.



## 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.



**Hand paint gun**



**Pre-marking system with paint can**



**Ejector filling of bead tank**



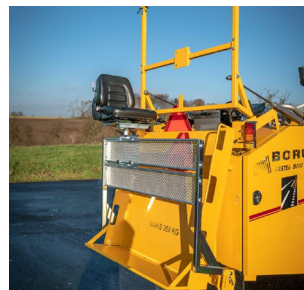
**Air drier for bead tank**



**Fixed pointer**  
With hydraulic lifting system



**Remote control for BM Lin-eMaster**



**Cone holder**



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



**Sunshade with 1 rotating light**



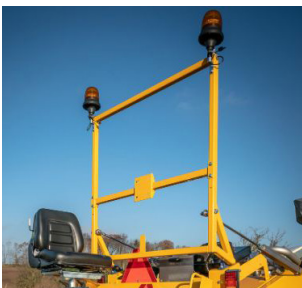
**Cruise control**



**BM Online**



**Bead alarm mounted on bead gun**



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



**Pre-marking system with paint gun**



**Airknife**