Booria Robotuft

## No limits for creativity

Booria Robotuft (Hand-tuft Robot) is an advanced robotic machine for producing wide range of modern and fashionable tufted carpets and area rugs. This advanced robot is able to handle your single orders, mass production running as well as sampling.

Depending on the pile heights **(13–75mm)**, tuft effects (U-tuft Cut Pile, J-tuft Cut Pile and Loop Pile), yarn material, thickness and number of yarn ends to be tufted, wide range of tufted carpets and area rugs collections will be achievable. In addition, variety of colors and yarns in type, thickness and material whether is Wool, Polyester, Nylon, Linen, Polypropylene, Cotton or their blends lets one create fantastic and unique effects.
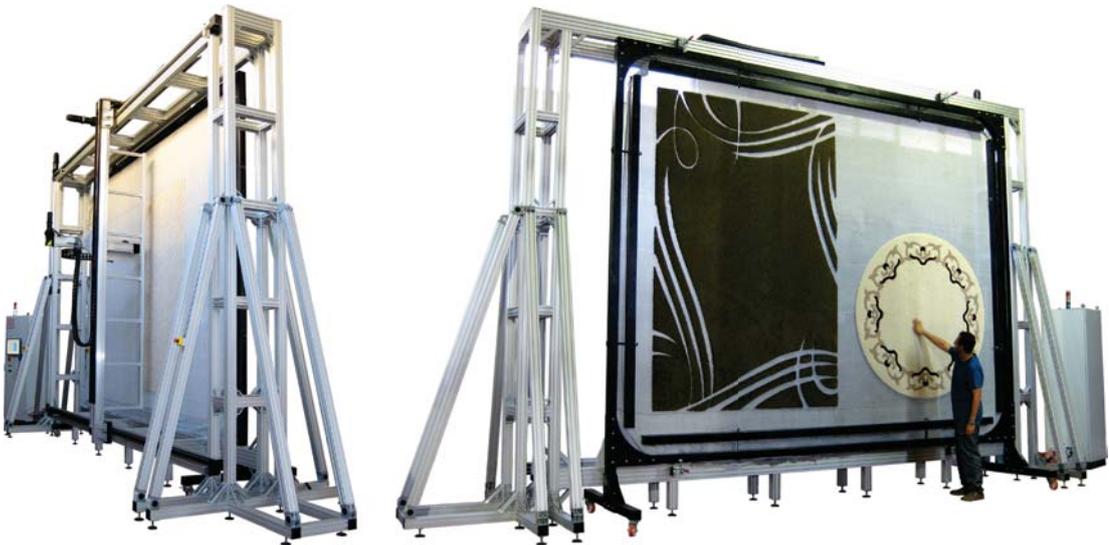
By using the well integrated solution of Booria, Robotuft and dedicated carpet designing software **Booria Carpet Designer**, making variety in design, colors and tuft effects will be no more time-consuming or costly. Moreover creating **3D effects (variable pile heights)** will be fulfilled easily in Robotuft and designing software.

Ability to produce with maximum speed of tufting gun (2000 stitches/minute) without any vibration or instability in mechanical structure is achieved by using unique German quality structure. This rigid and well engineered structure will lead to higher production rates and make it a long life product. Utilizing **advanced controller with six servo motors and four accurate linear drives** for controlling all actions in robot results in higher tufting accuracy, increasing speed of un-tufted moves and decreasing the stoppages, all lead to higher efficiency. The leading edge technology makes the robot agile and smart.

Smart cut and loop forming system is also such that it gives higher efficiency and flexibility. After defining the pile type in software as cut or loop, the robot will switch smartly between each and there will be no need to halt the production for changing from cut to loop or vice versa. Meanwhile by using **variable pile heights system you will be able to create 3D effects** on the tufted carpet and rugs.

Easy handling and smooth running let one personnel control and run several robots and consequently lead to considerable labor cost reduction. It also eliminates human production errors and let you produce high quality and complicated products with the same hand tuft look. This unique robot has the potency to produce different fashionable products which can lead to a **rapid return of investment (less than a year)**, if Robotuft is operated at full production capacity.

Features ...

:: **Smart cut and loop forming system** for switching between cut and loop piles without any mechanical settings or machine stoppages

:: **3D effects due to variable pile heights system**

:: Ability to produce different pile heights and densities in the same design

:: Different cut and loop tufting effects

:: **Having access to higher speeds due to advanced rigid German-made construction**

:: Ability to tuft wide range of yarns including Wool, Polyester, Acrylic, Linen, Viscose, Cotton and their mixture without changing the tufting head

:: Supporting different types of yarns in thickness, twist, ply, etc.

:: Ability to adjust the backing fabric tension due to **stretchable and movable frame**

:: **Advanced tufting head** with rapid turning on corners and high accuracy to have better corner effects and increase production speed

:: Smooth running with minimal manual control

:: **Producing up to 6.5 square meters per hour**

:: **Easy installation** and running without any special production preparation

:: **Low electricity usage**

:: Complete advanced human machine interface (HMI) with many different capabilities in different languages

:: **Full compatibility with Booria Carpet Designer Robotuft CAD software**

:: **Easy file handling (single BRT file)** and transferring through network or via USB

:: **Remote control** and monitor the robotic machine

:: Ability to set density for each color layer to create fantastic modern designs

:: Coming with three different sizes: **2x3, 3x4 and 4x6 meters**
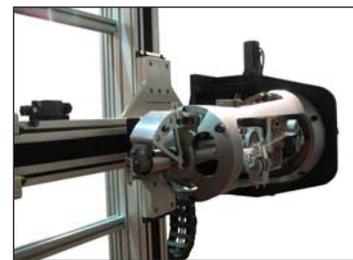
Benefits ...

:: **No limits for creativity**

:: **Wide range of products**

:: Having the possibility to create collections matched with market requests (based on: densities, pile heights, yarn types, colors, cut and loop effects, etc.)

:: **Be fashionable**

:: **Quick and cost effective production**

:: Test the market with new ideas (color, designs, yarns and combination of effects) without high risk or cost

:: Capability to produce single original designs, samples or large orders

:: Flexibility in production with **low inventory of yarn**

:: **Fast return of investment**
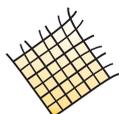
Booria
CAD/CAM Systems

Technical Specifications ...
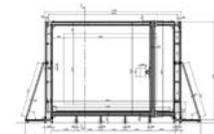
:: Main Frame

Robotuft BR-III 2x3
(Effective area 2200x3200 mm)
Main frame – RK BLOCAN Profile made in Germany
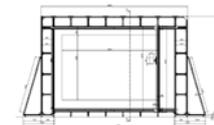6350 x 3575 x 1600 mm (LxHxW)
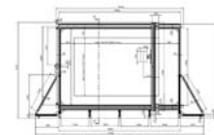
Robotuft BR-III 3x4
(Effective area 3200x4200 mm)
Main frame – RK BLOCAN Profile made in Germany
7910 x 4575 x 2000 mm (LxHxW)

Robotuft BR-III 4x6
(Effective area 4200x6200 mm)
Main frame – RK BLOCAN Profile made in Germany
11240 x 6215 x 3000 mm (LxHxW)

:: Control Unit
Electrical cabinet,
Control panel with Booria Robotuft HMI (Human Machine Interface) software in any language based on requests,
Windows XP Professional,
USB & Network support,
Remote control with touch screen monitor

:: Frame
One complete removable and stretchable metal frame incluing nail board, capable to set the backing fabric tension

:: Tufting Unit
Tufting gun Ø6mm or Ø11mm
Smart cut and loop forming system
U-tuft Cut Pile, J-tuft Cut Pile 13-75mm and Loop Pile 8-40mm
Variable pile height accessories for 3D effect (optional)

:: Creel
Creel with 8 eyelet yarn break detector sensors
Rotating creel (optional)

:: CAD Software
Booria Carpet Designer, Robotuft Edition
3D Carpet designing plug-in (optional)

:: Optional Equipment
Additional tufting gun Ø11mm
Additional frames for continuous production
Protection guard, based on European standards

:: Production specification
Different production time based on row distances and number of stitches per meter
Maximum production 6 SQM per hour
Maximum nominal tufting speed 2000 stitches per minute

:: Initial working Requirements
Main voltage 220 VAC 50-60 Hz single phase, 2KW
Compressed air 300 lit/min, minimum 8 bar, Recommended 600 lit/min 10 bar

Booria Robotuft HMI

Get Connected to your Robot

Booria Robotuft HMI (Human Machine Interface) software is specially developed to ease the robot operator tasks. With user-friendly interface and using advanced algorithms this HMI software can handle the Robotuft controlling tasks and provide special reports to make the operator run the robot smoothly.

Filing tasks, design previews, design selection, tufting process preview, setting the robot parameters, like speed and dimensions, ability to view the tufting process on control unit while robot running, etc. are the capabilities that HMI provides to the operator.
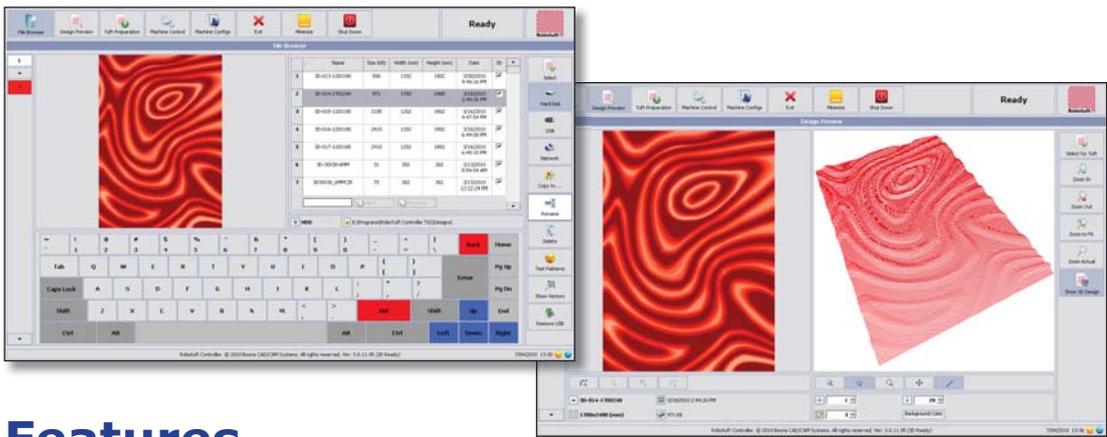
Features ...

- :: **User friendly GUI** (Graphical User Interface)
- :: Create **monitoring reports** like progress rate, process remaining time for each color, total process remaining time, tufting speed, etc.
- :: Ability to set machine parameters like density, cut and loop mode, min/max of tufting speed, overall speed, etc.
- :: Design preview in both **Raster** and **Vector** formats
- :: Production time calculation for production planning
- :: Ability to change and move the design positions
- :: Ability to rotate or flip the design
- :: View and control of the robot speed
- :: Preview of the production process
- :: USB and Network support
- :: Touch Screen Ready
- :: **Multi lingual user interface**
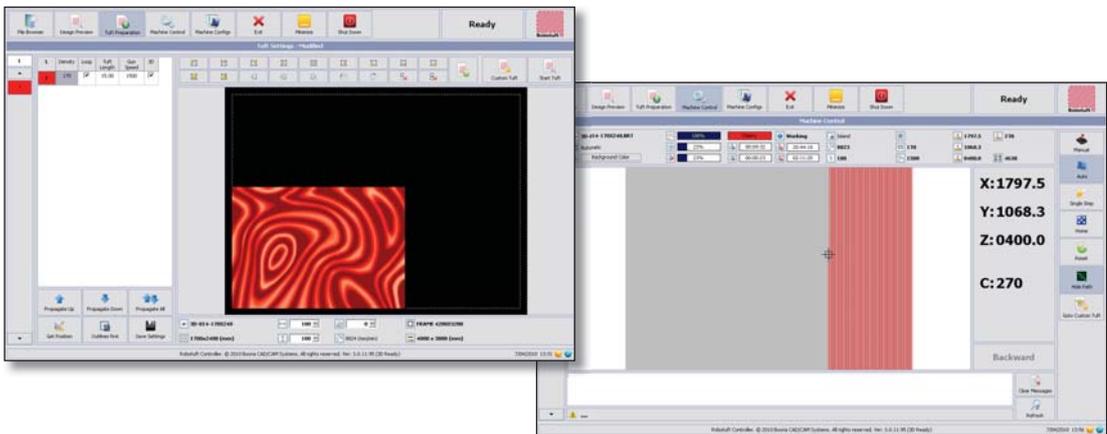
Booria Carpet Designer

An ideal solution from the land of carpet

Booria Carpet Designer Robotuft Edition is a comprehensive solution which is able to meet all designing tasks in handmade, machine made and **robotic tufted carpet and rug production**.

This advanced solution is coming with flexible set of drawing tools and complete range of designing functions and features, which are increasing the designing speed, accuracy and proficiency of hand-tuft robots.

In **Booria Carpet Designer Robotuft Edition** handy and advanced tools and functions of pixel-based designing, enable the designers to prepare vector-based designs for robotic tufted area rugs. This ability leads to rapid, versatile and beautiful area rug design preparation which once was the main problem for this type of area rug production. Rug designs can be freely prepared in pixel-based format and can be converted to vector-based format by utilizing advanced conversion function to be tufted on robot .

Accompanied with important features and functions, this revolutionary **raster to vector conversion solution** enables the designers to create various designs freely.
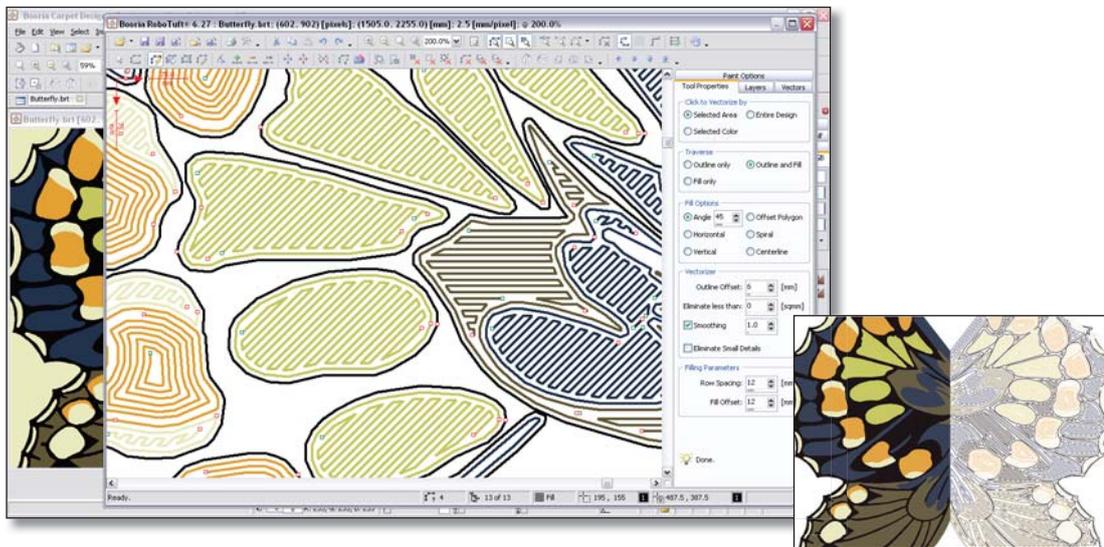
Through this special product, **all the difficulties of creating hand-tuft carpet designs will be eliminated** and variety comes to your production.

This software also **calculates and optimizes the best path for robot moves** which will speed the tufting process significantly. Consequently this will reduce the production time and the costs as well. Designers will meet no boundaries and they will find the designing process the sweetest part of the job. Even they can easily **import vector and raster designs or digital images** in **Booria Carpet Designer**, reduce the number of colors to their desired ones, clean and retouch it with a wide range of functions and drawing tools and make it ready to be tufted with **Robotuft** in a few minutes.


Booria Carpet Designer Robotuft Edition with 3D Carpet designing plug-in is fully compatible with Booria hand-tuft robot, **Robotuft**. This unique set of hardware and software can bring many advantages for area rug producers such as rapid response to the market trends.

Producers are just hours away from the final products because the responding time to market inquiries, from idea to production, can be reduced to hours and even minutes!
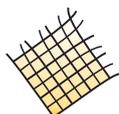
Features ...

:: **Windows Seven, Vista and XP compatible** (32-bit and 64-bit)
:: Equipped with a complete set of drawing tools (up to 60 drawing tools)
:: Special drawing tools for spiral and symmetric motifs with customizable brushes
:: Consisting of considerable features and functions (more than 200 functions) such as cut, copy, paste, duplicate, resize, flip, rotate, repeat, mirror, symmetry, insert, etc.
:: Different color reduction routines by taking advantage of artificial neural networks and interactive methods
:: Basic repeat options (with standard repeats such as straight, quarter, half, brick, mirror x and y, customizable drops, etc.)
:: Automatic resizing tools to enable quick and easy modification of designs to new constructions and qualities
:: Rapid retouching and carpet design preparation in different sizes
:: Ability to work with scanned or digital images to prepare the carpet design
:: Easy color masking and unmasking
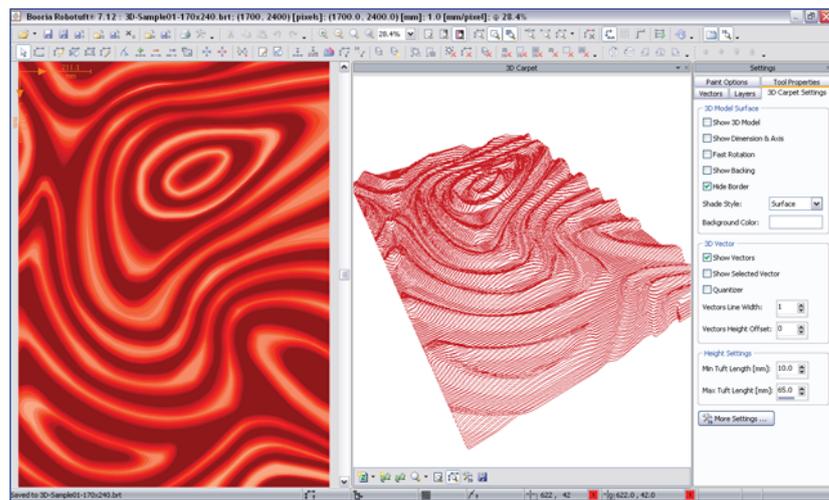
Special features of Robotuft edition ...

:: **Vectorizer tool** with smoothing function (to convert the raster designs into the vector designs)
:: **3D Carpet designing plug-in** (optional)
:: **Vector editing tools** such as: Move, Join, Split, Reverse Direction, Extend, etc.
:: Different tools such as: Fill, Offset, Measure, Pen, etc.
:: Different filling algorithms: Zigzag in different angles, Offset polygon and Spiral
:: Filtering functions for optimized production
:: Production time calculation
:: **Preview of production process**
:: Import and Export to major Raster and Vector files; such as: HIT, DXF, DWF, PLT, BMP, PCX, GIF, TIF, PNG etc.
:: Export to machine coded files
:: View raster and vector layers of the same design file at one place
:: Color-coded vectors with respect to the original design files
:: **Path Optimizer** in different ways to optimize up to 60% of un-tufted moves
:: **Yarn and material consumption calculations**

Booria
CAD/CAM Systems

www.booria.com