

# eSolutions : Integrated Tufting

**E** **FAB** GmbH

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# eSolutions : Integrated Tufting Solutions

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## **E SOLUTIONS**

- Offers our customers with a seamlessly integrated and fully compatible tufting solution, and with the peace of mind from a single source of accountability in EFAB GmbH a German company:

**E TUFT**

**E HMI**

**E DESIGNER**

**E SHEAR**

**E TABLE TUFT**

**E GUN**





# **eTuft** Robotic Tufting Machine

# eTuft : Robotic Tufting Machine

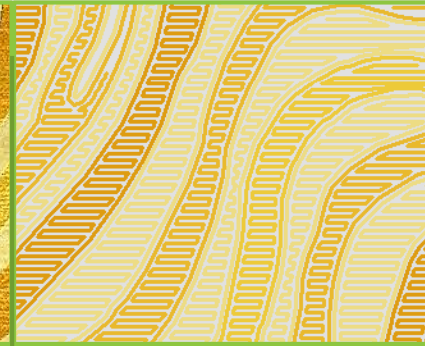
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Prepare design in pixels with complete set of drawing tools



Simulate design before production



Define tufting paths and optimize robot movement



Tuft it automatically with advanced robotic machine

From idea to finished tufted carpet just in a few steps

## Introduction

- **eTuft** is an advanced robotic tufting machine for producing wide range of modern and fashionable tufted carpets and area rugs.
- Ideal solution for:
  - Handling your single orders (custom rugs and projects)
  - Mass production running
  - Sampling



eTuft 3x4 Pro+



## General information

- Cut pile height **12–75mm** (U-tuft or J-tuft)
- Loop pile height **4-55mm**
- Production throughput: 1~6.5 SqM/Hour
- Works with wide range of yarns including Wool, Polyester, Fancy yarns, Nylon, Linen, Polypropylene, Cotton or their blends



## Key Benefits

- 3D tufting effects
- Automated cut-loop changeover
- Smart HMI operator interface
- Advanced and high-speed tufting head
- Sturdy mechanical structure for high speed and reliable production
- Compatible **eDesigner** carpets/rugs design software
- Production throughput: 1~6.5 SqM/Hour
- Return on Investment: Minimum ROI within one year (subject to the customer's production requirements and design complexities)

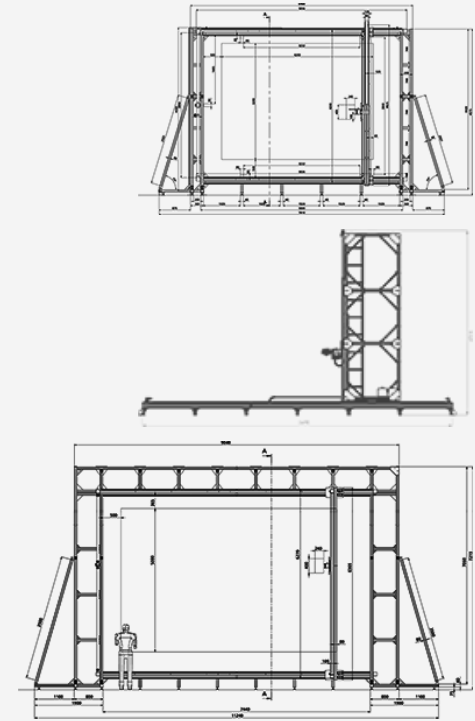
# eTuft : Robotic Tufting Machine

made in germany

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## Models

- **eTuft 3x4 Pro+**  
(Effective tufting area 3200x4200 mm)  
7910 x 4952 x 2000 mm (LxHxW)
- **eTuft 4x6 Tower**  
(Effective tufting area 4100x6100 mm)  
8960 x 5318 x 1312 mm (LxHxW)
- **eTuft 4x6 Pro+**  
(Effective tufting area 4200x6200 mm)  
11480 x 6215 x 3000 mm (LxHxW)





# eTuft : Robotic Tufting Machine

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eTuft 4x6 Pro+

# eTuft : Robotic Tufting Machine

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eTuft 4x6 Tower



# Competitive Advantage

**20~30% faster than competitors!**

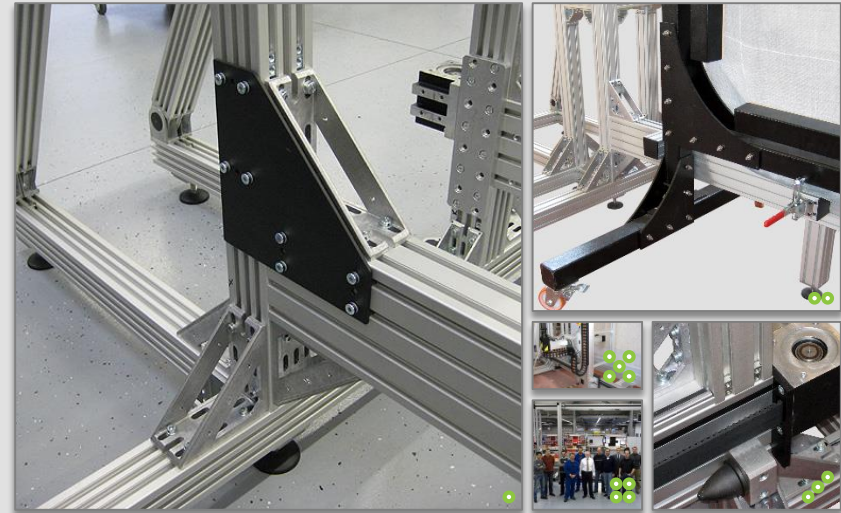
(based on customers experiences)

**Minimum pile height 12mm!**

(comparing with 16mm)

## Mechanical structure

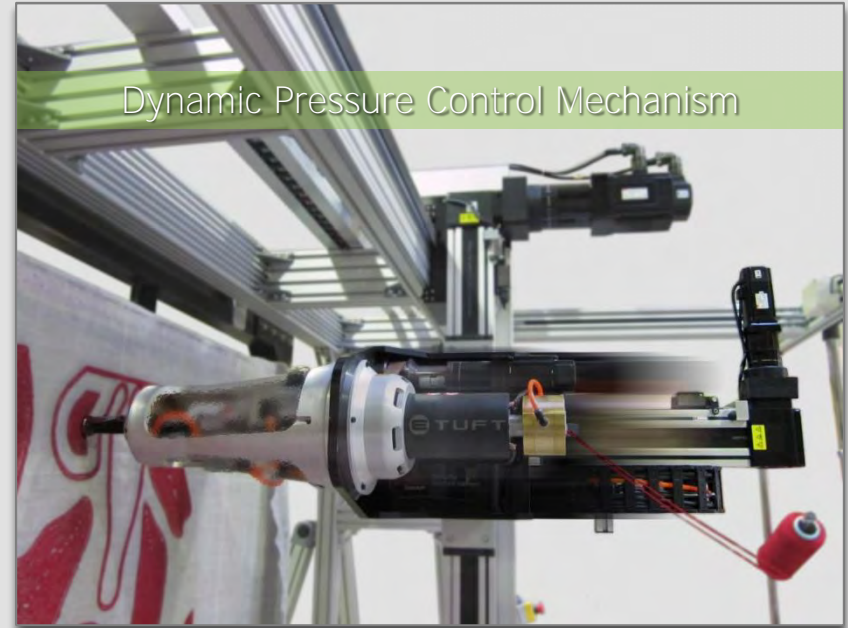
- Carefully designed and built with German components.
- Sturdy mechanical structure which enables high speed tufting without harmful vibrations.
- No need for any floor preparation. Thus, the **eTuft** robotic tufting machine can be relocated very easily as required by your production needs.
- Over-engineered for excellent tufting quality and machine reliability: e.g., using 4x linear units, 6x servo motors.



- Sturdy structure
- No need for any floor preparation
- High accuracy linear units
- Made in Germany
- High speed tufting without vibration

## Mechanical structure

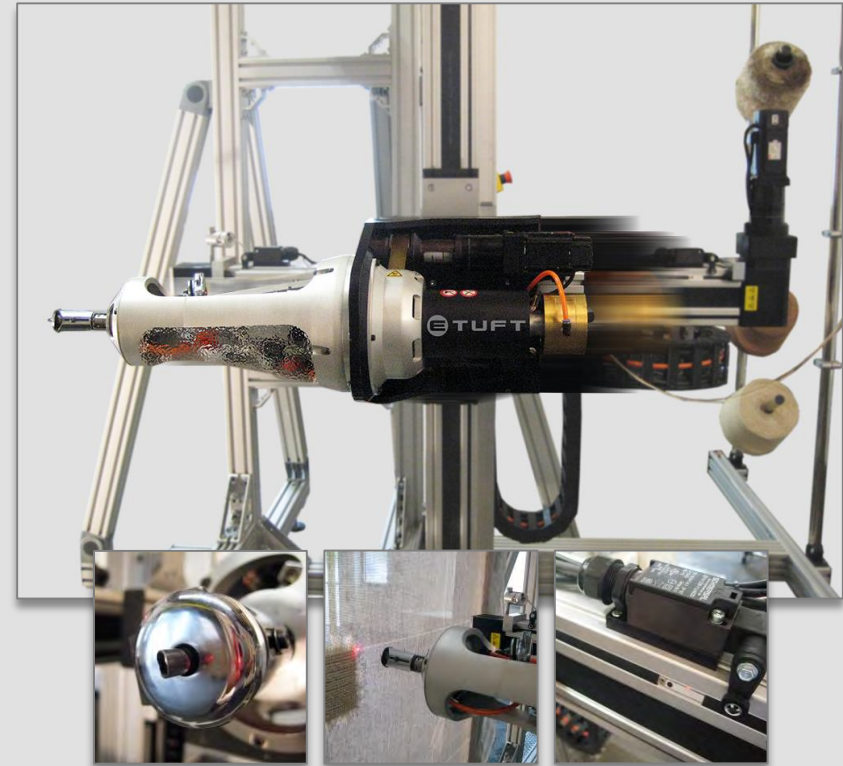
- Unique design for ensuring primary backing's precision tension control
- Using high accuracy linear units driven by servo motors for optimal penetration of tufting gun onto the backing fabric. (Versus other relatively primitive methods of pneumatic cylinder or manual adjustments)



## Mechanical structure

The benefits of this mechanical structure are:

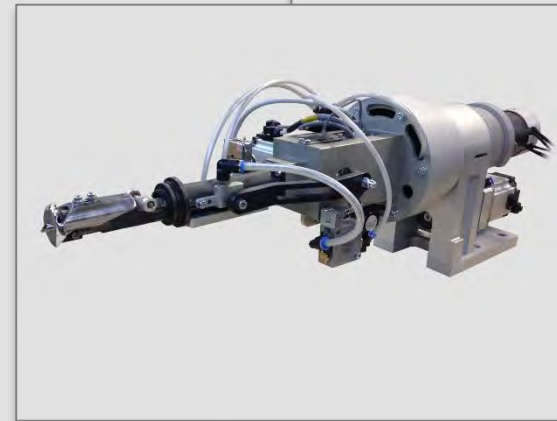
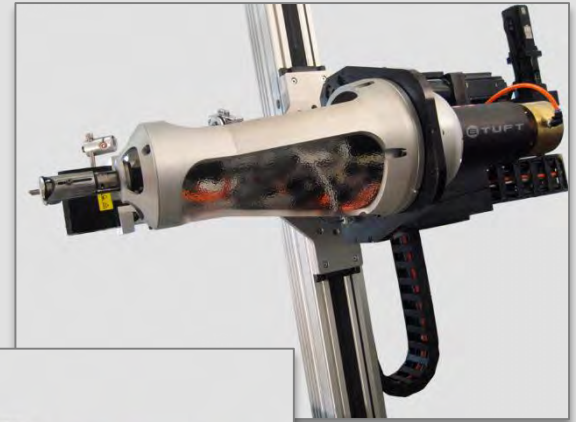
- High production throughput, even with complex designs (at least 2~3 times faster than pneumatic cylinder-based method)
- Continuous and smooth tufting operations without mechanical vibrations or shocks (increased lifespan of machine)
- Precise control of backing fabric's tension, thus ensuring top tufting quality (precise positioning of tufting head's penetration via **eTuft** control logics)





## Tufting gun

- Our cutting mechanism in tufting gun is based on guillotine cutting principle which is very efficient for a wide range of yarns.
- For switching over of tufting from cut to loop or vice versa, you won't need to stop the machine for 5~10 minutes for changing of cutting blade. On **eTuft** machine, the switchover is done automatically under software control.
- **eTuft** machine works with a wide range of yarns, including many types of hard-to-cut fancy yarns.



## Very Accurate Tufting

- Controlling the needle position for accurate tufting
- **Tufting very small details**, even four single stitches!
- **Tufting the very complex and classic designs**
- Very clean tufting on the back of carpet



# eTuft : Competitive Advantage

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## Control unit

- Advanced control unit, armed by our own HMI software with very unique Graphical User Interface
- Touch Screen User Interface
- **eTuft** machine is uniquely equipped with wireless remote control device. This remote device greatly improves the machine operator's efficiency, as he can operate more than one machine simultaneously from different spots around the machines (front or back of machine) or even 40~50 meters away from the machines.

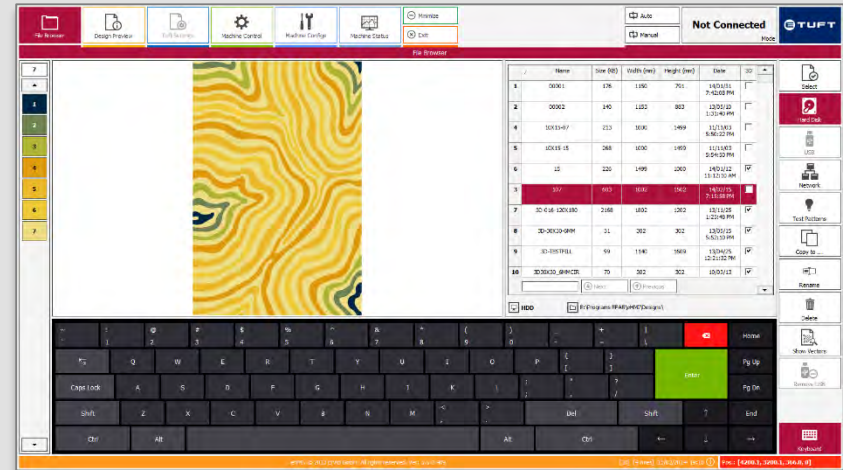


# eTuft : Competitive Advantage

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## eHMI

- Unique multilingual Graphical User Interface (English, German, Spanish, Portuguese, Russian, Turkish, Chinese ...)
- Design preview both in Raster and Vector format
- Transferring design to the tufting machine by one single file
- Ability to rotate or flip designs
- Ability to change tufting parameters on the fly, including: density, cut or loop mode, tufting speed, pile heights, and much more





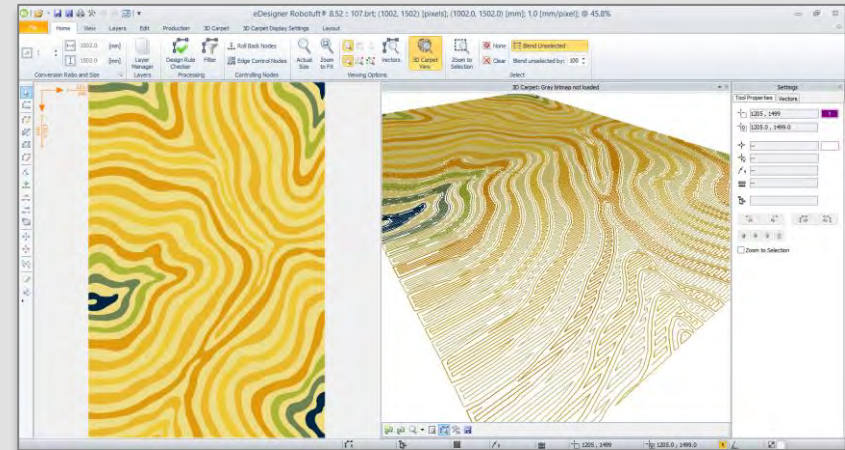
# **eDesigner** Carpet CAD Software

# eDesigner : Carpet Design CAD Software

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## Introduction

- **eDesigner** is a comprehensive solution which is able to meet all designing tasks in handmade, machine made and robotic tufted carpet and rug production.
- **eTuft** and **eHMI** are fully compatible with our **eDesigner** Carpet Designer CAD software, supporting variable pile height (3D) and cut-loop designs.



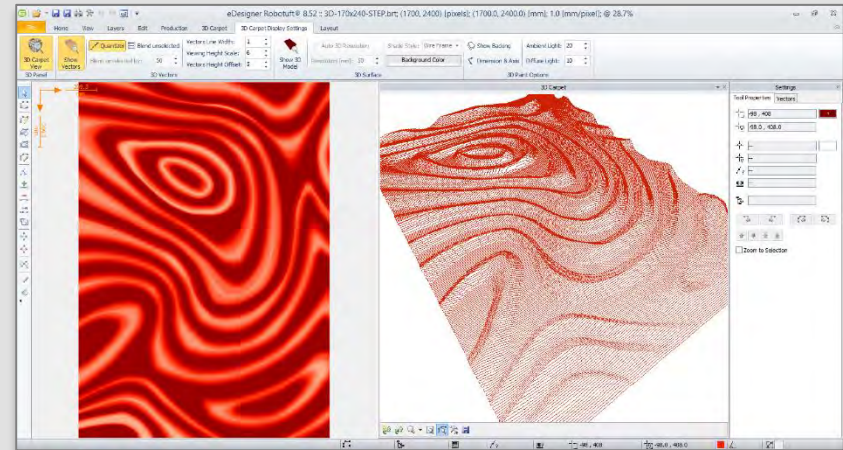
**E** DESIGNER

# eDesigner : Carpet Design CAD Software

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## Key Benefits

- Raster and Vector editing tools
- 3D Carpet designing tools
- Ability to defining different properties of tufting for each color in design, such as: cut-loop, pile height, density and ...
- Advanced "Path Optimizer" to optimize up to 60% of robot moves
- Import and Export to major Raster and Vector files: DXF, DWF, PLT, BMP, PCX, GIF, TIF, PNG etc.
- Yarn and material consumption calculations



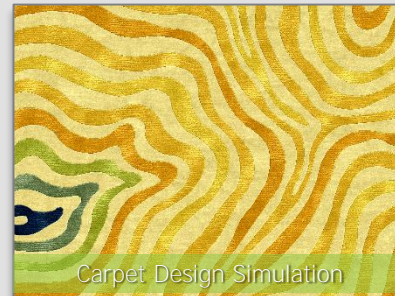


# eDesigner : Carpet Design CAD Software

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## Key Benefits

- Color Library (Chromatone, ARS or user defined)
- Border Wizard
- Carpet Design Simulation
- Room Decoration

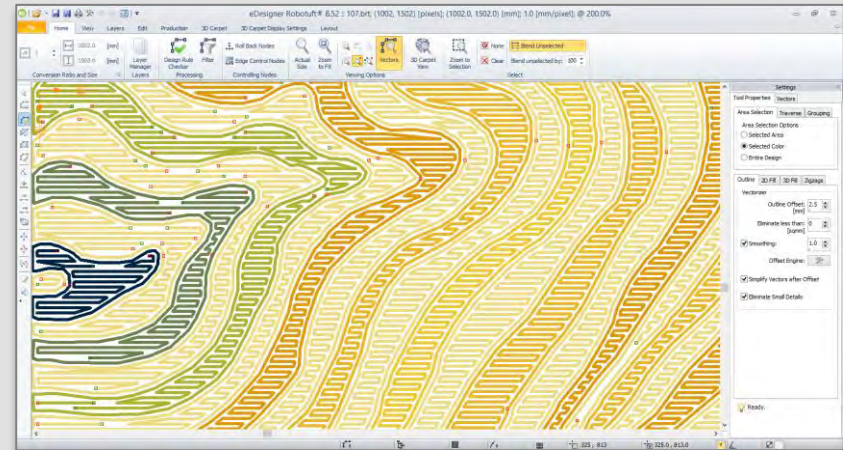


# eDesigner : Competitive Advantage

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## eDesigner

- Transferring design to the tufting machine by one single file instead of several files. (The relevant machine codes will be generated by the machine control unit, an automatic process transparent to the operators.)
- Note that EFAB GmbH does not license "3D", "cut-loop designing" software modules to any third parties, although we may license just the basic functions of our design software to selected machine vendor.

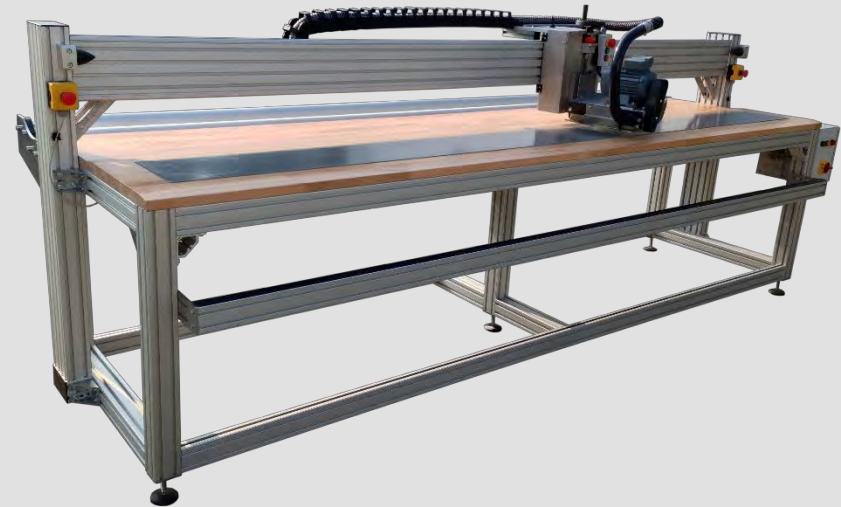




# **eShear** Carpet Shearing Machine

## General Information

- **eShear** (Stationary Carpet Shearing Machine) is a high quality and heavy duty machine designed for large scale carpet production.
- It shears exponentially faster and more accurate than small handy shearing machines.
- **eShear** is a high precision machine and easy to operate machine. It comes in different shearing width from 300cm up to 650cm with several accessories and optional equipment.



eShear T300 (3 meter active shearing width)



# eShear : Shearing Machine

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## Specification

- Shearing width: 300-650cm
- Shearing head width: 30cm
- Shearing Depth: Easily adjustable
- Carpet un-roller unit on back
- Carpet collecting tray on bottom (Optional)
- Vacuum unit (Optional)
- Shearing speed adjustment (Optional)
- Automatic carpet feeder (Optional)



# eShear : Shearing Machine

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eShear T650 (6.5 meter active shearing width)  
with "Automatic Carpet Feeder" and "Carpet Collecting Tray on bottom"

**E** SHEAR



# **eTable Tuft** Table-Tufting Machine

## General Information

- **eTable-Tuft** machine is suitable for manufacturing of bath mats and rugs with desired pile height and stitch length. Also it is suitable for mops production.
- The principle of tufting is not new, but machine has been designed and built based on latest German technology.
- This robust machine can tuft on heavy fabrics or can over-tuft on already tufted carpets.

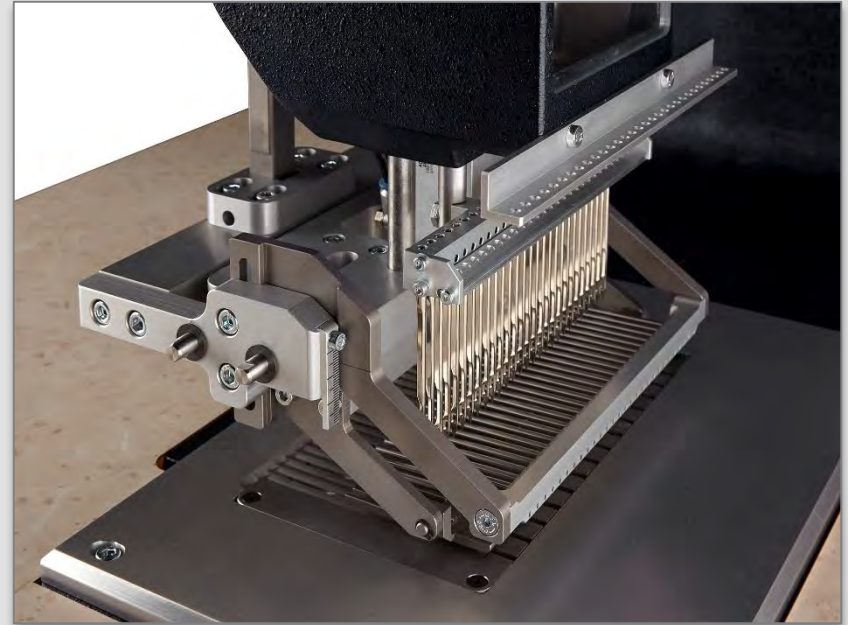


**E** TABLE TUFT



## Specification

- Tufting width: up to 150 mm
- Stich length: 3 - 8 mm
- Number of needles: up to 51 needles
- Pile height: 8 - 40 mm (optional 50 mm)
- Pile type: loop pile or cut pile
- Gauges: 1/10", 1/8", 5/32" 3/16", 1/4" ...
- Table length: 150 cm
- Power rating: max. 1800W
- Operating voltage: 230 VAC (180V - 250V)

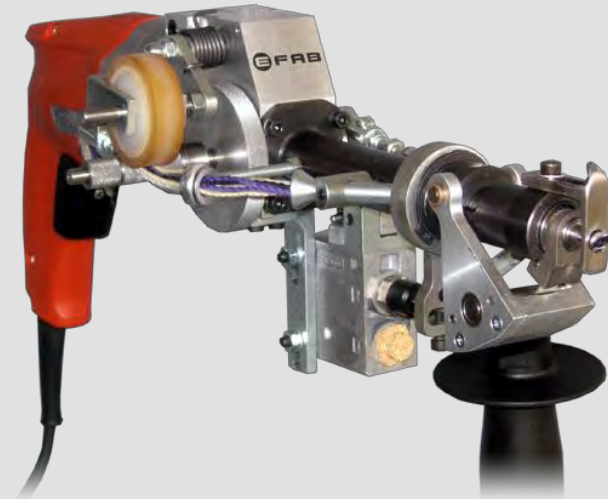




# **eGun** Hand-Tufting Gun

## General Information

- **eGun** (Pneumatic Hand-tufting Gun) is a flexible pneumatic tufting gun based on guillotine cutting principle which is very efficient for a wide range of yarns including Wool, Viscose, Polyester, Fancy yarns, Nylon, Linen, Polypropylene ...
- **eGun** is a heavy duty and long life tufting gun which is very easy for maintenance. Thanks to guillotine cutting principle, it has a cheap and long life blade which you can sharp it several times easily. Meanwhile you can change it from cut to loop and vice versa very easily in a few seconds.



**E GUN**



Tufted carpets by **eTuft**

# Tufted carpets by eTuft

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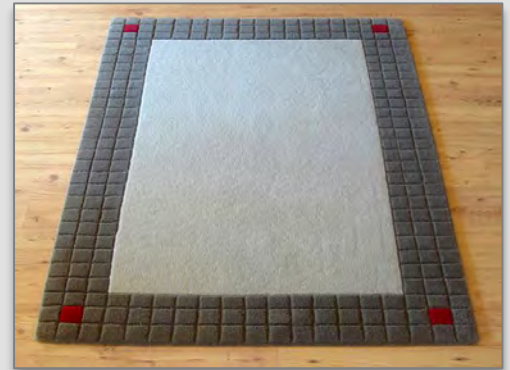
# Tufted carpets by **eTuft**

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# Tufted carpets by eTuft

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# Tufted carpets by eTuft

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Design Simulation by **eDesigner**

# Design Simulation by **eDesigner**

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# Visit us

- You are invited to visit EFAB GmbH facility located in Korschenbroich (25 minutes from Dusseldorf international airport) at a time convenient for you.
- You can visit our demo machine while working and we are offering trial runs of samples on **eTuft**, using your choice of yarns and carpet design graphics.

# Contact us

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