

# TSD240

## User manual



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## IMPORTANT SAFETY INSTRUCTIONS

**Machine location:**

*Do not use the printer outdoors! The printer is developed to be installed on a flat, dry surface. This surface or table must be capable of carrying a weight of at least 10 kg (excluding the force used to spread the paste). The printer should be used with room temperatures between 15 and 25 degrees Celsius.*

***Use the printer only in well ventilated rooms.** During the printing the flux will release some gasses. These gasses released by the flux can be unhealthy, **please follow the safety instructions of your paste supplier.***

**Regular use:**

*The printer is developed for printing paste on PCBs only.*

***When used for anything other than printing paste on PCBs you will void your warranty!***

## Introduction

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*Remark*

*Pictures in this manual could be different than the actual model you purchased.  
They are meant to explain the printers' use and function.*

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The TSD240 stencil printer is designed to put solder paste on PCB's with a "stencil". A stencil is a thin metal sheet which has holes matching the position of the pads located on the PCBs.

Unlike other stencil printer brands, the TSD240 has unique features for user friendly handling of stencils and PCBs.

*Some of the features include:*

- *Stencils do not need mounting holes.*
- *Fixing a stencil is fast, easy and requires no heating of the stencil.*
- *Positioning of PCBs is simple but effective.*
- *You may use the stencil printer for single as well as double sided PCBs, even if there are already components on one side!*

## Setting up the stencil printer

This machine is produced and packaged with special care to deliver you the best quality possible. We still advise you to use extra care while unpacking the machine. After unpacking make sure to look for any damage on the outside of the machine and immediately report it to the transport company.

**If you do not make any remarks of transport damage on the freight papers, you will lose your right to any insurance claims!**

Carefully unpack the stencil printer and save the original packaging in case you need to ship the unit. Please make sure the following items are included with your stencil printer:

- *1 stencil printer TSD240*
- *3 Allen Keys, metric sizes*
- *1 non-permanent fine line marker pen*
- *6 magnetic placeholders for PCBs*
- *2 magnetic points of support for PCBs*
- *1 transparent outline-sheet to define PCB position*
- *1 squeegee*

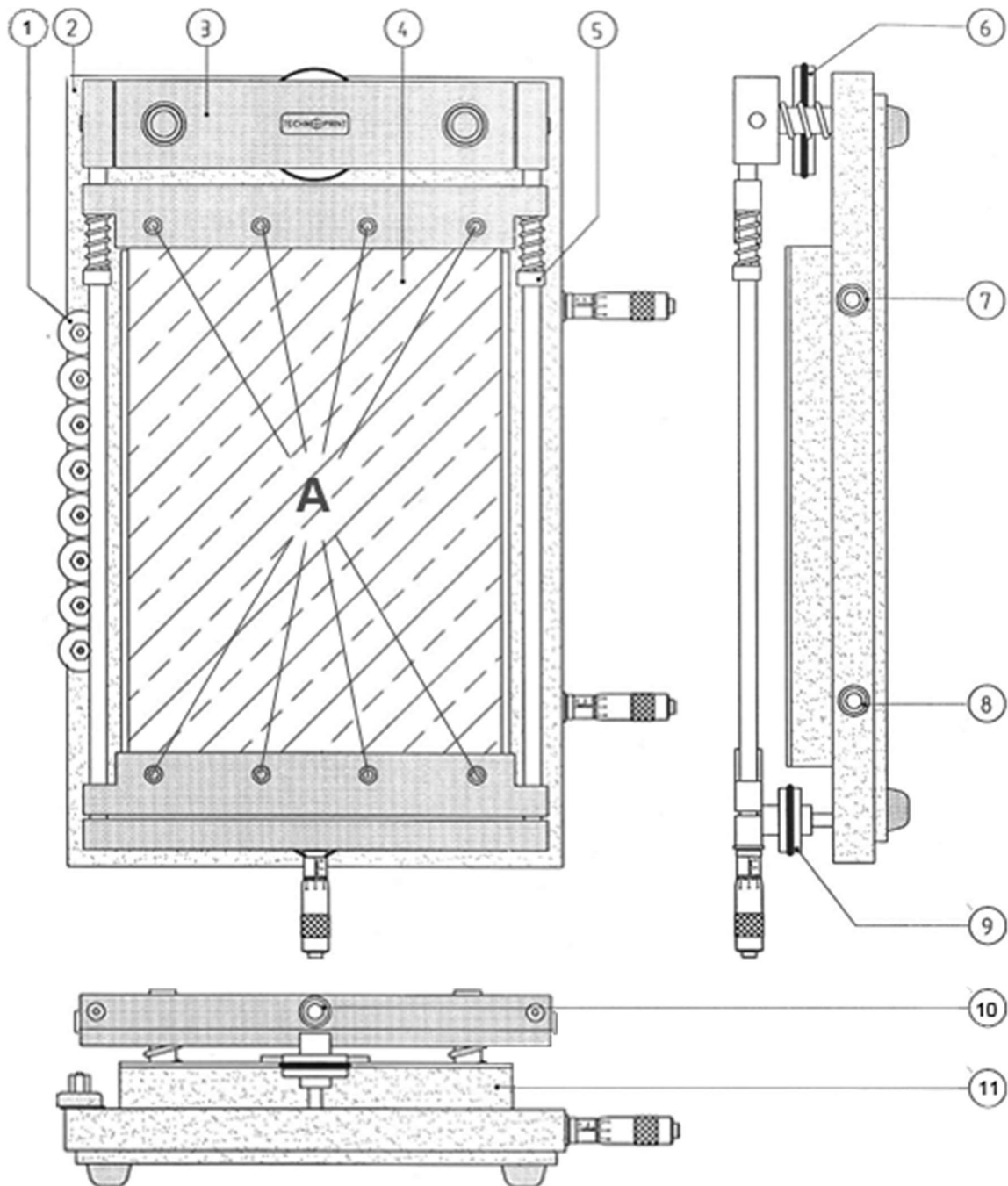
## Placement of the stencil printer

Place the stencil printer on a flat, stable surface. This surface should be capable of carrying the weight of the machine as well as the pressure you add while spreading the paste.

Leave a 10 cm gap free on each side of the machine for easy access to the X-axis, Y-axis and height adjustments.

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## The TSD240 overview



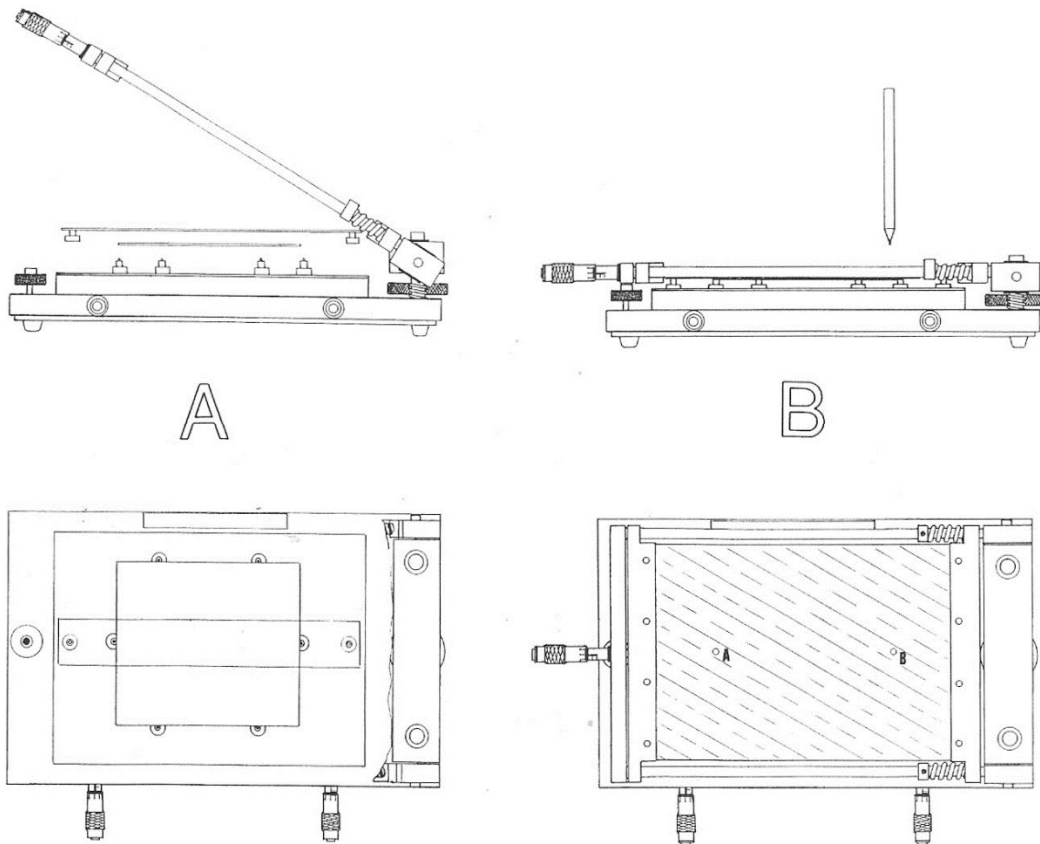
1. Storage place magnetic devices
2. Base plate
3. Stencil frame
4. Stencil
5. Stencil size adjustment
6. Top height adjustment of stencil
7. X-axis alignment top
8. X-axis alignment bottom
9. Bottom height adjustment of stencil
10. Y-axis alignment and stencil tensioner
11. PCB table

## Getting started

### Installing the stencil

1. Loosen up the Y-axis alignment or stencil tensioner. (10)
2. Unscrew the eight screws of the stencil frame. (A)
3. Place the stencil in the first stencil holder.
4. Tighten the four screws.
5. Do the same for the second stencil holder.
6. Tighten the stencil tensioner. (10)

### Installing the first PCB



1. Open the printer. (picture A)
2. Place the PCB roughly in its position with 4 to 6 magnetic placeholders.
3. For large boards use the two magnetic points and place them in the middle of the PCB.
4. Place the transparent outline sheet over the PCB and close the printer. (picture B)
5. Find two easy to identify holes in the stencil which are on top of the outline sheet. Then use the marker pen to place a dot on the outline sheet through the previously picked holes. After this open the printer. (picture A)
6. Adjust the PCB until the PCB pads match the marker dots made during step 5.
7. Remove the outline sheet without moving the PCB and close the printer. (picture B)
8. Use the bottom and top height controls to bring the stencil just above the PCB. The less space between the stencil and PCB, the better.
9. Use the X- and Y-axis for small adjustments to align the stencil holes and PCB pads.
10. Your printer is now ready for printing!

## Operating the stencil printer

Once the installation has been completed following the steps described on page 5, it is easy to place successive PCBs on the placeholders.

### **BUT BE CAREFUL**

Due to the fact that no PCB is exactly the same, it is advisable to check if the PCB pads still exactly match the stencil holes before each print.

Let's get started!

1. Place a PCB on the place holders and close the printer as described before. Check if the holes and pads are still aligned.
2. Put the solder paste on the backside of the stencil with a spatula. Take care that the solder paste is applied over the full width of the stencil cut-out.
3. Place the squeegee behind the solder paste under a 45-60 degree angle and, in a zigzagging motion while applying a little pressure, pull the squeegee to the front side of the stencil. Make sure that all the holes in the stencil are filled with solder paste.
4. Remove the remaining paste at the end of the stencil with the squeegee.
5. Carefully open the printer and remove the PCB. It is now ready for assembly!
6. For successive printing repeat from step 1.

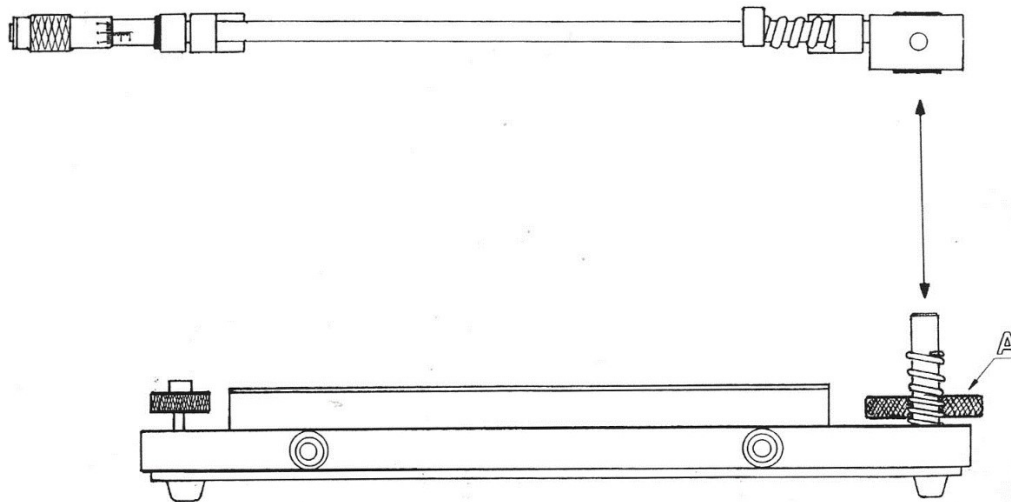
## Maintenance and care

Use the TSD240 only in a dry, clean location and strictly avoid aggressive environmental conditions such as etching equipment. After using the machine, clean the machine with a solvent that only removes paste and has no aggressive elements in it that could affect the machine or the stencil.

### **Note:**

*To prevent corrosion, slightly oil all metal surfaces twice or several times a year with resin and acid free machine oil. (PTFE oil will be a good lubricant) No further lubrication is needed or advised.*

## Cleaning the stencil frame



For easy cleaning of the stencil frame turn the top height adjustment knob (A) clockwise until you can lift the frame from the base plate. After cleaning, replace the frame on the base plate and turn the knob (A) counter clockwise to secure it.

## Product specifications

Dimensions	410 x 270 x 110 mm
Max. PCB size	180 x 240 mm
Max. Stencil size	175 x 255 mm
Weight	6,7 kg

## Warranty

Like all of our other products the TSD240 has a one year warranty against faults in materials or production.

Any defective parts under this warranty will be repaired or replaced at our costs. The part in question, or the whole unit, has to be returned to us, together with a detailed description of the fault. Transportation costs are the responsibility of the customer.

Defects due to normal wear, as well as defects due to wrong use or lack of maintenance and care are not covered under this warranty.