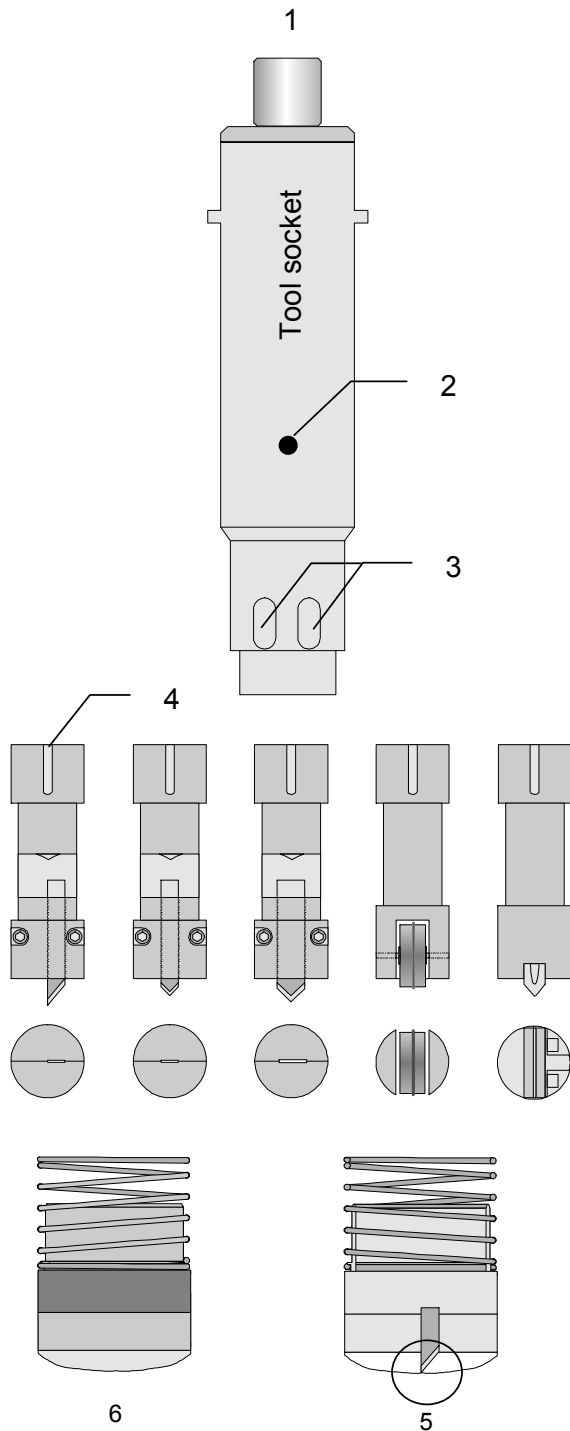# Operating Instructions for the Tz-P/TzT-P Head

Preparing the tools:

1. Remove slipper (6) from the tool socket. Insert knife holder into tool socket in such a way that pin of the taper socket (2) is inserted into the groove of the knife holder (4).

2. Secure with setscrew (1) knife holder in socket.

3. Insert knife into knife holder. Point should protrude from the knife holder approx. 5 – 10 mm.

4. Insert Allen key into holes (3) and tighten screws of knife holder.

5. Mount slipper on tool socket.

6. Adjust knife using setscrew (1) in such a way that the knife point is in the same vertical position as the slipper (5).

7. Insert tool socket into head. The red point of the tool socket must be placed on the red point of the tool reception (head).

8. Lock bayonet fixing.

The standard slipper is designed for cutting depths of up to 4 mm. For materials with a thickness of 4 to 8 mm a slipper of 8 mm is available (option).

Operating procedures for the Tz head

Mode 1 – Cuts through materials (diecut):
The knife is **initialized to the cutting surface**. No cutting depth must be defined. The **Up Position** must be adjusted to the material thickness.

Mode 2 – For incisions into the material (halfcut) or for creasing the material:
The knife is **initialized to the material surface**. The **Down Position** (cutting depth) must be entered.

With both procedures the **Offset** (correction value) must be set. This value is added to or subtracted from the **Down Position** or initialized depth respectively.

The cutting depth is always entered via the menu. The setscrew of the tool socket is used for securing and for the basic setting of the tool holder.

After initializing 3 tool positions are possible:

Park Position	=	The highest possible Z-axis position is approached
PU (Pen Up)	=	Z zero position - set UP position
PD (Pen Down)	=	Z zero position + Down pos. + Z-Offset

By pressing the pen key after initializing – the Z-axis moves to the **PU** position.
By pressing the pen key again – the Z-axis moves to the **PD** position. Any additional press on the pen key switches the Z-axis between the **PU** and **PD** positions.
By pressing the "SHIFT"* and the pen key simultaneously the head moves into the **Park Position** again.
The parameters of settings 4/5/6 are suited to be used with the TzP/TzTP. It is recommended to always use one of these settings. Refer to the User's Manual chapters 2-23 to 2-25 and 2-49.

The function keys F1 - F4 contain the following functions in settings 4/5/6:

F1 - Tz-OFFSET (1183)	F2 - DOWN POS (1882)
F2 - INIT (1184)	F4 - REPLOT (332)

Menu functions

Tz-ODULE (118)

	UP POS	1181	Distance of knife to Z- zero position in the Pen Up mode
	DOWN POS	1182	Tool depth based on the Z- zero position in the Pen Down mode.
	OFFSET	1183	Correction value added/subtracted to the Z- zero position / cutting depth
	Z-INIT	1184	Initialization process is started
	Z-INIT AUTO	1185	without function
	Z-LOWER	1186	Lowering speed of Z- axis
	Z-LIFT	1187	Lifting speed of Z- axis
	MODE	1188	Selects between position or pressure mode
	PRESSURE	1189	Sets pressure

* SHIFT is in the center of the "moving keys" - refer to the User's Manual, chapter 2-20

Explaining the position and pressure modes:

Position: The tool always moves to the set position, irrespective of the material strength or pressure.
Pressure: The tool moves downward until the set pressure is reached. Selectable values: 2 – 10 kgs. The tool is initialized to the surface of the material, cutting or incision depths "POS DOWN" (1882) have to be entered. Should the pressures in the X and Y axis have to be set individually, then the appropriate tool must be selected from the menu "Pressure switch" (226) and saved under "Save user".

Initializing the Z-axis:

- Tool socket is inserted into head and locked.

- Trigger function Z-INIT (1183) by pressing the moving keys (x-direction), the Z-axis is moved up / down until the slipper / knife touches the material surface / cutting surface. By pressing the "SHIFT" key simultaneously lowering/lifting speeds are increased.

Upon touching the surface, confirm by pressing <ENT>
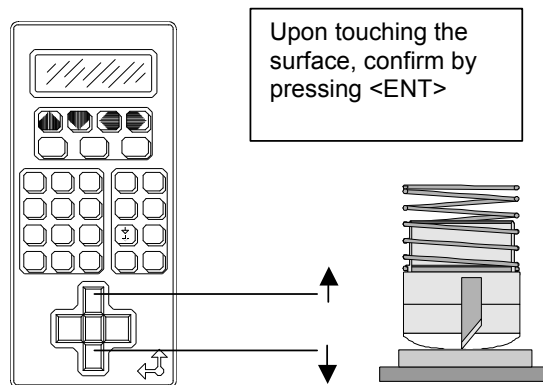
While initializing the Z-axis with a motorized tool such as **POT**, **EOT** or **DRT,** it is advantageous for the tool to be moving. In this way, especially with POT and EOT the actual depth of the knife can be monitored. By pressing the PEN key the tool starts / stops.

⚠ Only perform this function if the knife is properly inserted into the tool and the tool properly inserted into the head.

At these high oscillating frequencies the exact position of the knife can not be determined. To make setting the depth easier, we recommend the following procedure:

Remove slipper from oscillating tool and insert tool head. Press ESC 1184 and activate Pen key. The tool starts to move. Place a sheet of paper on the table under the tool and slowly lower the tool. Keep sliding the paper around until the knife tip touches the paper.
The movement of the paper simulates the cutting process.
- Press <ENT> to confirm that the surface is reached. The value is automatically saved for the active tool and remains saved even when the instrument is switched off and on again. Settings of cutting depth, up position, pressure etc. can be saved individually for each tool in the **User Parameter** menu. Refer to section **User Parameter** in the User's Manual.
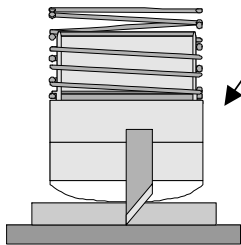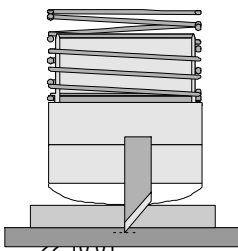
Operating Instructions for the Tz-P/TzT-P Head

Mode 1

Mode 2

Material
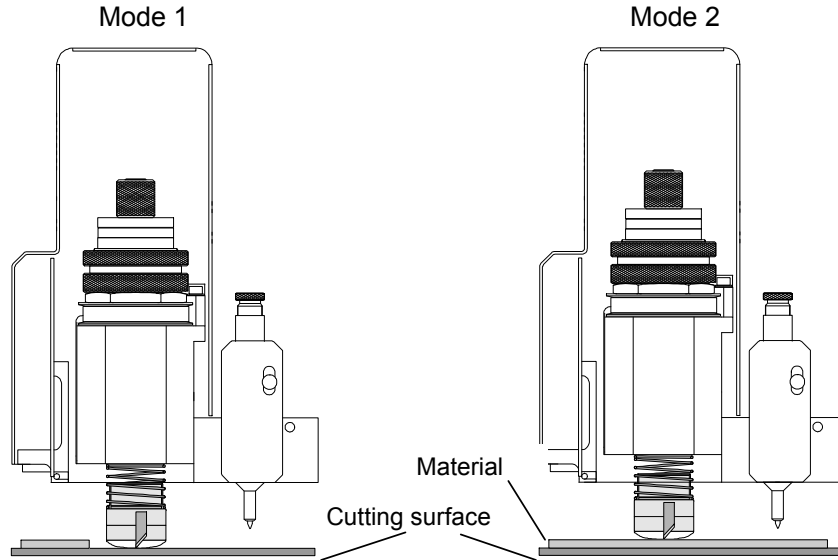
Cutting surface

Settings for cutting in mode 1
(Z-zero point = cutting surface)
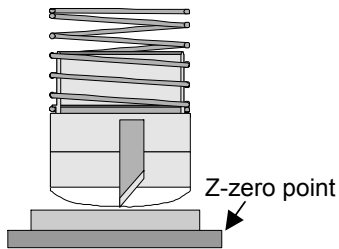
Z-zero point

Pen up position = Z-zero point - Up position
In the pen up mode the knife moves over the material at the preset height.
Up pos. = material thickness + 2 mm

"Diecut"
Pen down position = Z-zero point
The knife is in a down position as thick as the material or down to the upper edge of the cutting surface. In order to get a good cutting quality the knife, however, must cut into the cutting surface. This cutting depth depends on material and is adjusted with the Z-offset (1183).
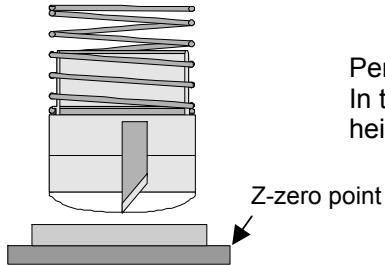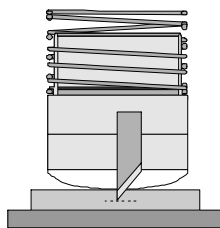
Cutting depth = Z-zero point + Offset

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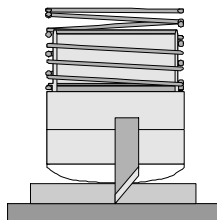
Settings for cutting in mode 2
**(Z-zero point = material surface)**

Pen up position = Z-zero point - Up position
In the pen up mode the knife moves over the material at the preset height.

Z-zero point

"Halfcut"
Pen down position = Z-zero point + Down position

"Diecut"
Pen down position - Z-zero position + material thickness
The knife is in a down position as thick as the material. In order to get a good cutting quality the knife however, must cut into the cutting surface. This cutting depth depends on material and is adjusted with the Z-Offset (1183).
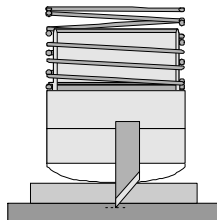
Cutting depth   = Z-zero point + Down pos + Offset

The plotting pen

Abb. 1

Abb. 2

Pen down

+ 0.5 mm

Inserting the pen:

- Select pen no. 2 <ESC> 211 2 ENT

- Loosen clamp screw (Fig. 1/1) and insert pen.

- Lower pen (Pen key)

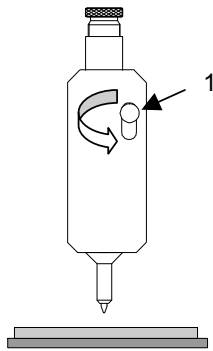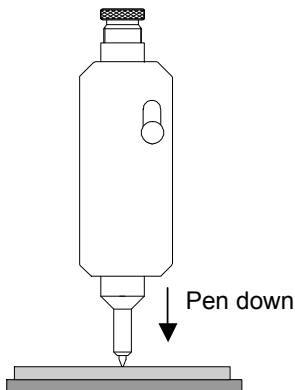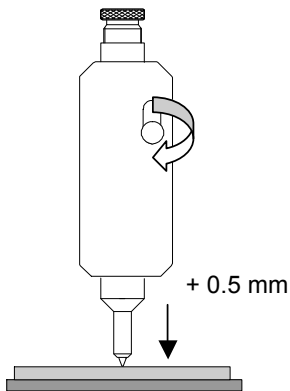- Push pen down by hand about 0.5 mm and tighten clamp screw.

The contact pressure of the pen is set with the adjusting screw. It should be set to approx. 100 grams. This is obtained when the distance between tool socket and setscrew is 7 mm.

7 m m

A totally screwed in adjusting screw generates a contact pressure of about 300 grams. This value would be too high and would in some cases impede the lowering of the pen.

Pen delays:

The pen delays have a direct influence on the lowering response of the pen and should be adapted depending on the tool used (e.g. ink pen).
If delays are => 30 ms then the pen is lowered more slowly.
Setting of delays is carried out via menu <ESC> 1142.

Ball point		Ink pen	
Tool delay		Tool delay	
1 Before down	0	1 Before down	0
2 After down	20	2 After down	50
3 Before up	0	3 Before up	0
4 After up	20	4 After up	50