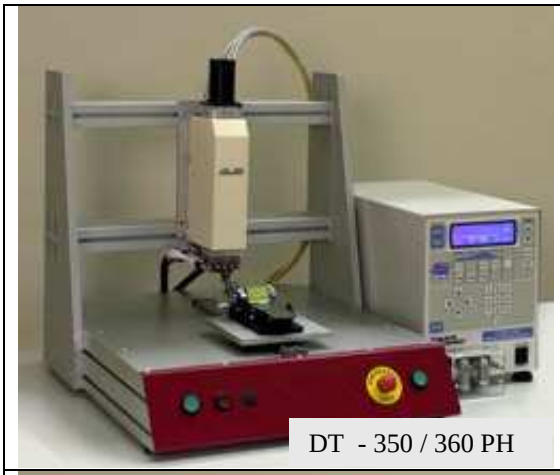
USER MANUAL
Desk Top Series – Automatic Operation

Models: DT-350, DT-360, DT-370, DT-450


DT - 350 / 360 PH


DT - 350 / 360 PLC


DT -370 PH


DT – 450 PLC

Manufacturer:	Miyachi Europe Corporation Schootense Dreef 21 P.O. box 164 NL-5700 AD HELMOND The Netherlands Phone: +31 (0) 492 54 22 25 Fax: +31 (0) 492 53 62 22 E-mail : info@mec.miyachi.com Internet : www.mec.miyachi.com
User manual specifications:	Date: August 2010 Version: 1 S.D.
The following documents are related to this manual:	• Electrical & Mechanical drawings • Bond head manuals • Spare parts list

Register of changes / Version control table

Table 1: Register of changes

Page	Version	Date	Status	Remarks
All	1.0	August 2010	Released	
Various	1.1	December 2011	Released	Options screen dumps for TD200 added and changes to illustrations

For extra information as to adjustments, maintenance and repair, contact the technical department of your supplier.

This user manual has been composed with great care. However, **Miyachi Europe Corporation** cannot be held responsible either for any shortcomings occurring in this user manual or for their consequences.

Author: S F Duerden

MIYACHI
MIYACHI EUROPE CORPORATION

Contents

1 SAFETY PRECAUTIONS

1.1 GENERAL SAFETY PRECAUTIONS

	**WARNING:** **Read this manual carefully before doing work on the Desktop system. Your supplier has no liability for injuries, damage and/or excessive wear, due to incorrect maintenance, unintended use, modifications and deactivation of safety devices.**
	**WARNING:** **The Desktop system and its safety devices must not be modified or changed without written permission from your supplier.**
	**WARNING:** **It is forbidden to install the Desktop system in an area with a possible explosive hazard due to chemicals or gases.**
	**NOTE:** **If the Desktop system is being used by a third party, you, as the owner/user, are responsible unless it is agreed otherwise.**
	**WARNING:** **Repair or maintenance of electrical circuit or component must only be done by qualified and trained personnel. Covers must only be removed and installed by a qualified technician.**
	**NOTE:** **Figures in this manual may not be exactly as shown.**

1.2 WARNINGS ON THE DESKTOP SYSTEM:

To warn the user/owner of the Desktop system for certain dangers/risks several warning pictograms have been mounted on the Desktop system.

Table 1: Pictograms on the Desktop system

	**Warning:** There is a risk of direct or indirect contact to live parts. Access is only allowed for technically qualified personnel. Labels are placed on the outside and the inside of the system and on connection boxes near to live parts.
	**Warning:** Risk of getting crushed between moving parts. Labels are placed near moving parts.
	**Hot surface:** Burning risk at the thermode and machine covers. Make sure that the machine has cooled sufficiently before you carry out maintenance work.
	**General safety symbol** Ensure the machine is only switched on when all the guards are in place. Keep the machine work table free of obstacles.
	**Earth (Ground) point** The label is placed on the left side of the system..
	**Warning:** There is a risk of direct or indirect contact with live parts when covers are open. Labels are placed on the outside of the control cabinet.
	**Warning** for maintenance and repair to make sure the main switch on the rear of the system cannot be switched on unintentionally.
	**Recycling note**: All parts of the Desktop system must be removed for recycling in accordance with local regulations, preferably to a company that can enable reuse of the materials.

	**NOTE:** **Regularly check if all pictograms are still in place on the unit.** **If they are not, replace them as quickly as possible.**

2 INTRODUCTION

2.1 GENERAL

This user manual makes sure new users are familiar with the operating and maintenance procedures, while experienced users may use this document as a reference work. References to other documents are made when necessary.
Operators and technicians using the machine for the first time should study this manual carefully, in particular the safety instructions given in section 1.
Additional training by Miyachi Europe Corporation is recommended if the user wants to become quickly familiar with the system. The training course consists of, among other things, training in the completely independent operation of the system. Knowledge transfer should not only take place by circulating this manual among the operators, but by practising with the equipment and doing practical work with the machine.
The manual is based on current techniques. Miyachi Europe Corporation retains the right to make changes to the documentation without being obliged to alter all previous versions.
Keep this instruction manual carefully for future use.

To underline certain subjects or actions the following markings are used in the text.

	**Tip** **Suggestions and advice for carrying out certain tasks more easily.**

	**NOTE:** **The statement concerned is to draw the user's attention to possible problems.**

	**WARNING:** **If the procedure is not performed carefully the users can injure themselves or others or seriously damage the system.**

	***NOTE:*** **Figures in this manual may not be exactly as shown.**

Also pay special attention to the following:
- Ensure a clean working environment with adequate illumination
- Keep the control cabinets closed during normal use
- Only use original components supplied by Miyachi Europe Corporation

The Desktop system is built for simple and efficient operation. However you must take note of the contents of this manual and act accordingly. All personnel who work on or in the vicinity of the installation must be aware of these instructions.
In addition to the instructions in this manual, all current general safety regulations and conditions must be obeyed.

Competent persons are persons who:
- have a certain level of knowledge gained by training/education
- have certain skills necessary to operate the Desktop system.

The operator has to be a competent person.

Qualified technicians are persons who:
- are competent
- have a certain level of technical knowledge gained by training/education
- are familiar with the techniques used in the unit
- are aware of the possible risks (trained **Miyachi Europe Corporation** personnel).

WARNING:
The installation, technical maintenance, repair and removal and removal of components may only be done by qualified technicians, unless specified otherwise.

Desktop system operators are competent persons responsible for controlling the machine, cleaning the unit and simple maintenance operations.

Desktop system qualified technicians are responsible for the installation, setting up and other maintenance operations.

The purpose of this user manual is to create a safe and an efficient interaction between man and system.

2.2 INTENDED USE

The Desktop is a system for the manual loading and unloading of the parts that are then processed under fully automatic control.
The system can be used for Hot-Bar Reflow soldering, Heat-Seal Bonding, ACF laminating and ACF Bonding.
The system has been developed for joining various product components.
The correct operating conditions are described in this user manual.

WARNING:
Your supplier has no liability for injuries, damage and/or excessive wear, due to incorrect maintenance, unintended use, modifications and deactivation of safety devices.

2.3 PRINCIPLE OF OPERATION

The system is a Desk-top system and is built on a chassis with integrated controls.
The machine operator is responsible for the manual positioning of the product components. The alignment of the product components is done in a fixture, using a micrometer screw, one or more dowel pins and/or an optional camera-monitor system.
After the product components are positioned, the system is operated by the start button or buttons. The joining cycle will then be carried out. When the joining cycle is completed, the product must be removed from the system by an operator.

The principle of the bonding system is the bonding of products by controlled movements of a thermode, thus creating a known force, at a preset temperature and time.

The joining cycle is as follows:
The thermode moves down in the Z-axis under pneumatic or motorised control. It is then heated until the preset temperature has been reached. The joining operation is carried out at a constant thermode temperature. The thermode will then move up and the system is ready for the next joining cycle.

2.4 SOUND LEVEL

The sound level has been measured in accordance with the Machine Directive requirements. The A-weighted equivalent continuous sound pressure has been measured at the working place during normal operating conditions. The sound level has been measured at a distance of one metre from the machine and at a height of 1.60 m above the reference plane. The measured A-weighted equivalent continuous sound pressure level (L_{Aeq}) does not exceed 70 dB(A).

2.5 SYSTEM REQUIREMENTS

The equipment requires no special foundation. A level table or bench strong enough to support the system is sufficient. When used in production, the machine and the adjacent area must be well illuminated.

2.6 SPECIFICATIONS – AIR AND ELECTRICAL SUPPLIES

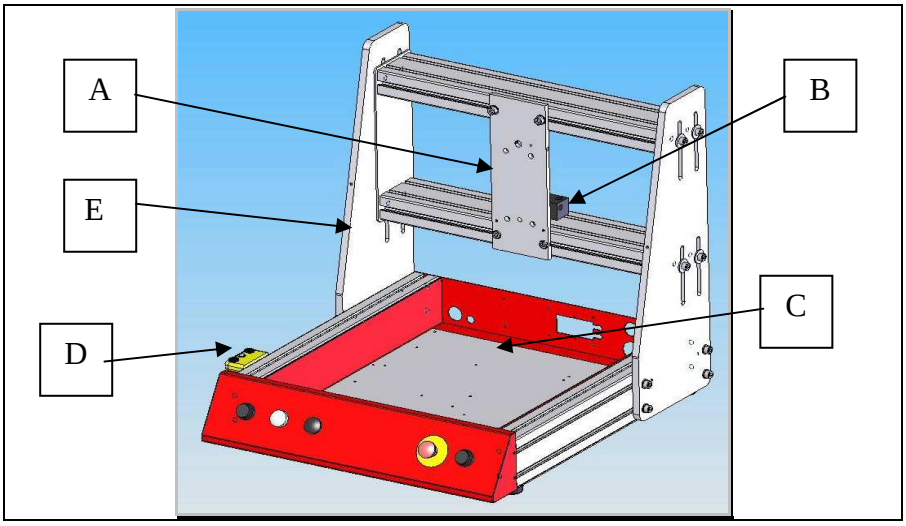
General	
Weight Joining system	40 kg / 88 lbs
Dimensions Joining system Depth Width Height	System: Heat Source: 600 mm / 23.62 Inch Dependent on 550 mm / 21.65 Inch Unflow constant heat 510 mm / 20.04 Inch
Maximum fixture height	80 mm / 3.15 Inch
Gantry open width	520 mm / 20.47 Inch
Fixture assembly base plate	160x160 mm / 6.30x6.30 Inch
Starting operation	Two hand control
Operating temperature	15-40 °C / 60-104 °F
Operating humidity	93%@40 °C / 93%@104 °F
Connection requirements	
Input voltage Uniflow Main fuse Input voltage Desktop (See note below) Main fuse	230 Vac, 50 Hz, 1-Phase / earth / zero 16 A max, type C or D delay fuse 230 Vac, 50 Hz, 1-Phase / earth / zero (Europe) 4 A max, type C or D delay fuse
Compressed air required	6 bar, dry & filtered air
Machine data	
Maximum peak current (Uniflow) Peak power (Uniflow 2) Maximum peak current (Desktop) Peak power (Destktop) Control voltage, internal Control voltage, internal	16 A 3.5 kw 4 A 300 W 12 Vdc, supplied by the transformer (option) 24 Vdc, supplied by the transformer (option)
Optional	Customer's choice

Note: Electrical supplies in non-European countries will be different.

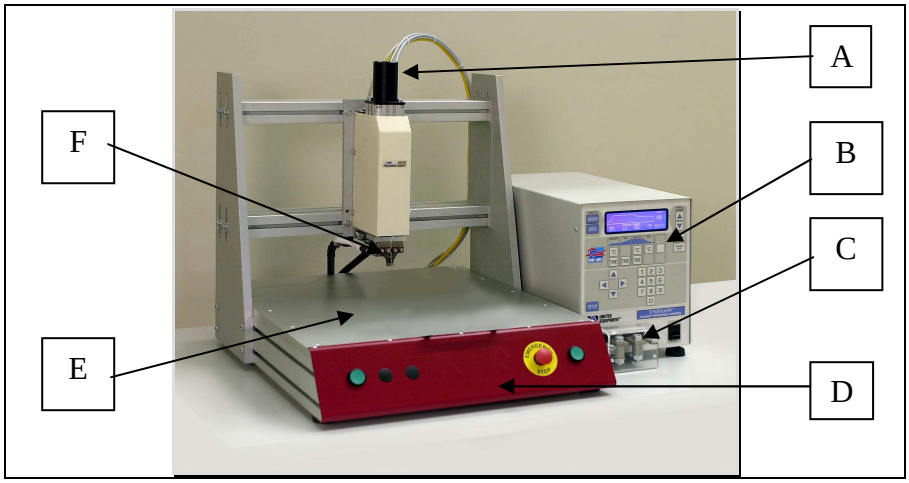
3 CONSTRUCTION

3.1 GENERAL CONSTRUCTION

The Desk Top (DT) systems consist of several parts, the main ones of which are shown below.

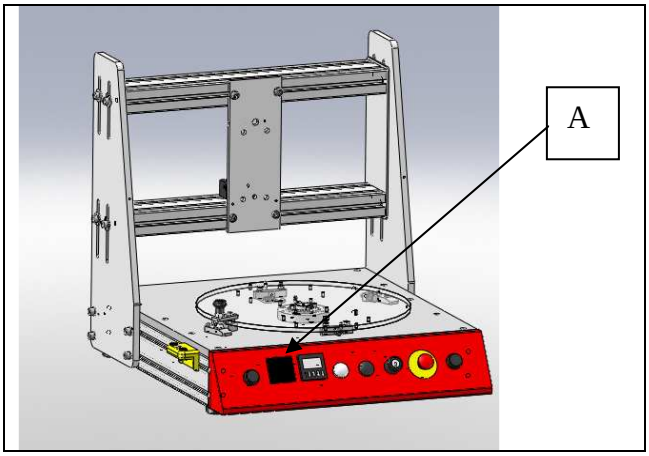


A. Left/right and rotation head adjustment plate
B. Power cable connection block
C. Electrical control drawer
D. Wrist strap earth (grounding) point
E. Portal (front/rear adjustment of the bond head)

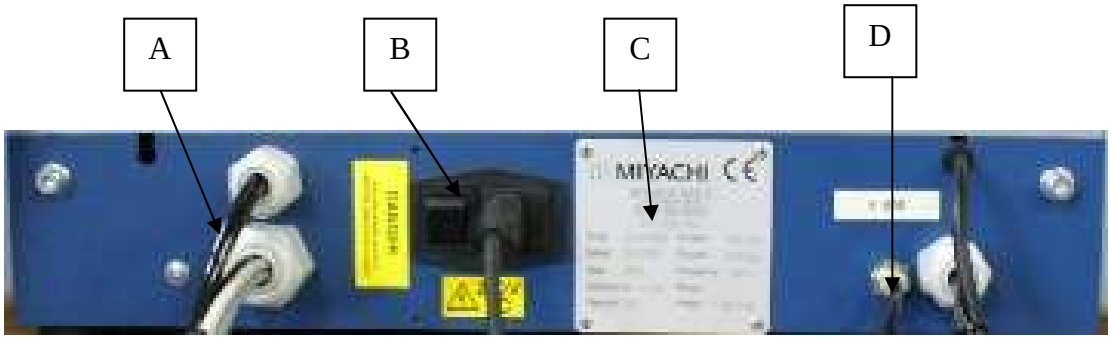


A. Pneumatic head (80N or 500N)
B. Uniflow power source
C. Safety cover power cables (option)
D. Control panel
E. Base plate
F. Quick Connect Block (QCB) and Thermode

Note: For more details about the pneumatic bonding head, refer to manuals 69H0082 (80N) or 69H0504 (500N).



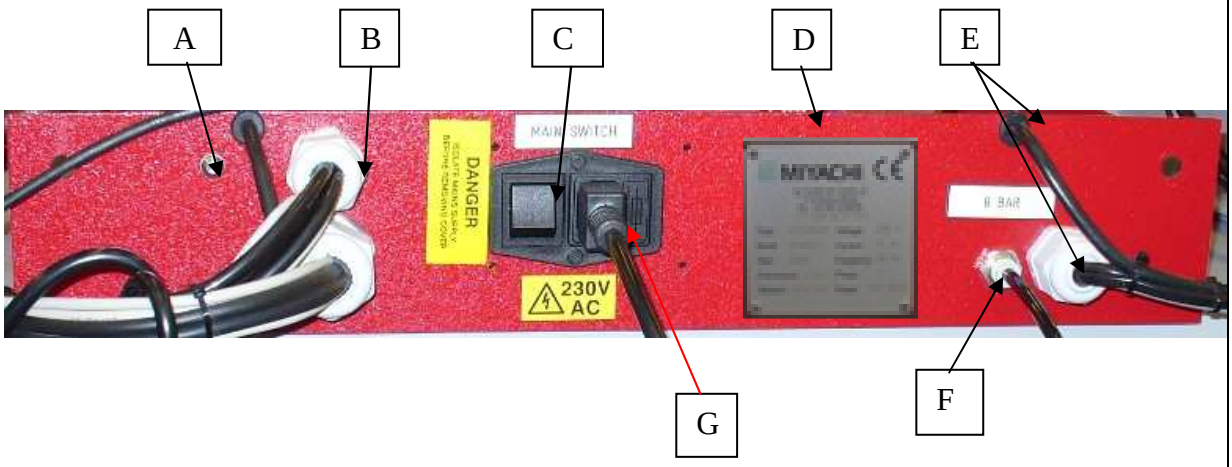
A constant heat control panel is shown at a typical position (A). It may be installed in other positions.



Rear panel (pulsed heat)

A. Power input and data cables from the Uniflow
B. Power input and main switch
C. Data plate and CE conformation
D. Pneumatic input connection

Note: The illustration above may not be exactly as shown.

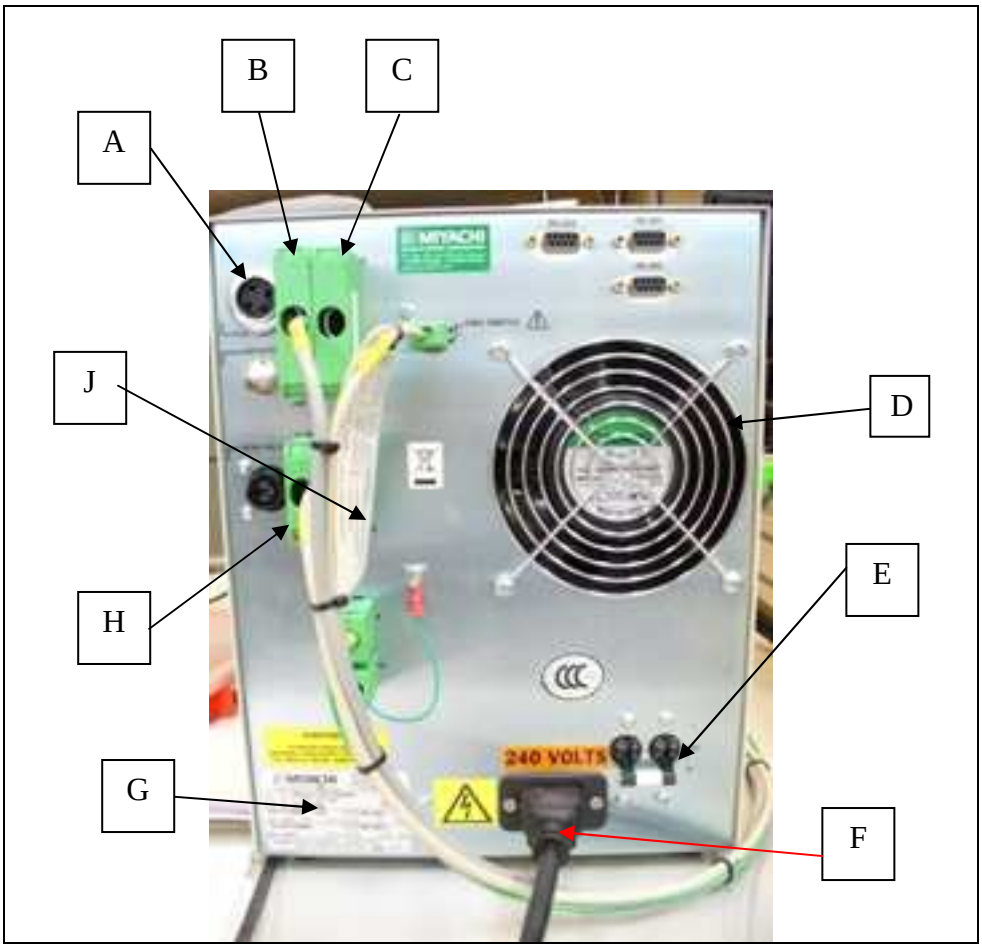


Rear connection panel (TD200 heat control)

A. Earth (ground) connection
B. Power input and data cables from the Uniflow
C. Mains switch
D. Data plate and CE conformation
E. Pneumatic and electrical control cables
F. Pneumatic input connection
G. Mains input connector

Note: The illustration above may not be exactly as shown.

Rear view modified DT-450 with options



A. Foot firing switch (option)
B. J4B firing home switch/in position sensors/start switches
C. J4A control functions (miscellaneous)

D. Fan outlet
E. Main switch
F. Mains input connection
G. Serial number and CE plate
H. J6B Z-axis valve/cool valve
J. J6A relays

Note: The connections may not be the same as shown.

3.2 TAPE INTERPOSER MODULE

If this is installed, refer to the applicable manual.

3.3 ACF MODULE

If this is installed, refer to the applicable manual.

3.4 SAFETY MEASURES AND DEVICES

For a list of the system pictograms, refer to table 1 of this manual. Make sure you obey the warning and caution instructions in this table.

3.4.1 Protection guards

The two-hand control is designed in such a way that the operator is protected from crushing and burning. It also prevents the unintended starting of the bonding process. When the head is moving down or the turntable is moving, there is a danger of crush injuries.

3.4.2 Hot parts

If the thermode is touched there is a danger of burn injuries as the temperature of the thermode can rise to 600 deg C. The thermode area has an optional shield and a warning pictogram is placed on the head guard.

3.4.3 Electrical safety

The Desktop system using pulsed heat is not provided with a main switch. The system power is controlled by the Uniflow. The Desktop system using constant heat control has no mains switch and before work is done, the complete desktop must be disconnected from the main supplies.

3.4.4 Emergency stop

The Desktop system is equipped with one emergency stop push button which is mounted on the front of the machine. Activation of the emergency stop button will stop all machine movements, but if the bond head is in the down position it well rise. Additionally, the main supply must be disconnected to isolate the constant heat controller.

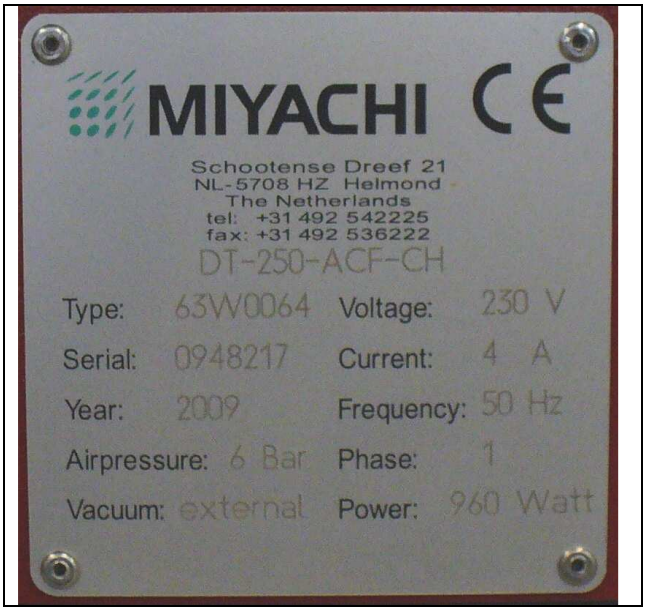
	**CAUTION** **If you push the red button when the head is in the down position, it will move up.**

Power supply and compressed air will be removed from certain parts of the machine immediately.

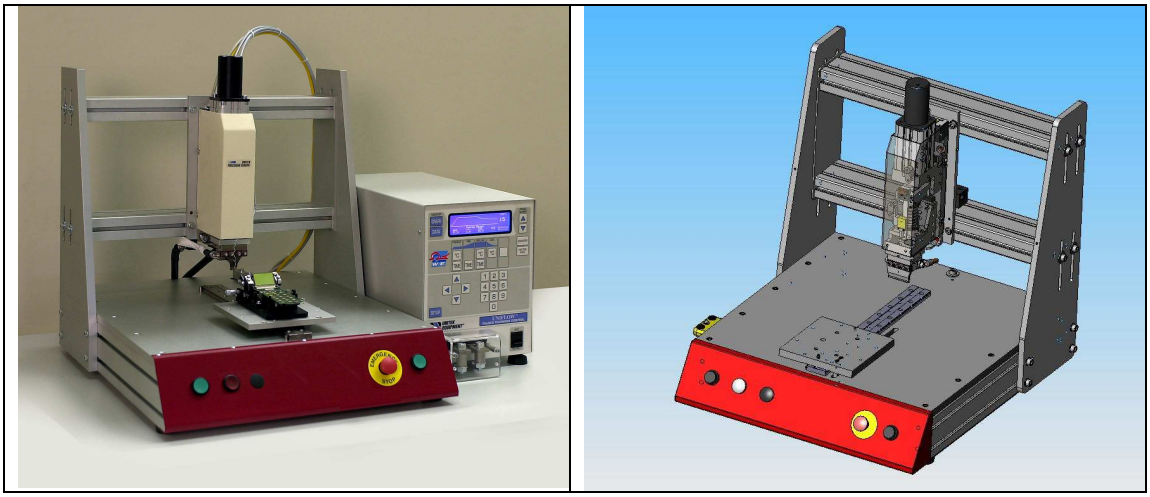
	**NOTE:** **Push the red button to activate the emergency stop.** **Deactivate the emergency stop by turning it counter clockwise.**

3.5 CERTIFICATION

The Desktop system and this manual have been designed, constructed and tested according to the European directives. During all these phases the relevant European standards have been taken into account. The CE-mark has been mounted on the unit. The directives and the standards mentioned are enumerated in the EC-Declaration of Conformity.



3.6 DT-350 SYSTEM DESCRIPTION



The illustrations above show a system with pulsed heat. PLC and constant heat systems are shown later.

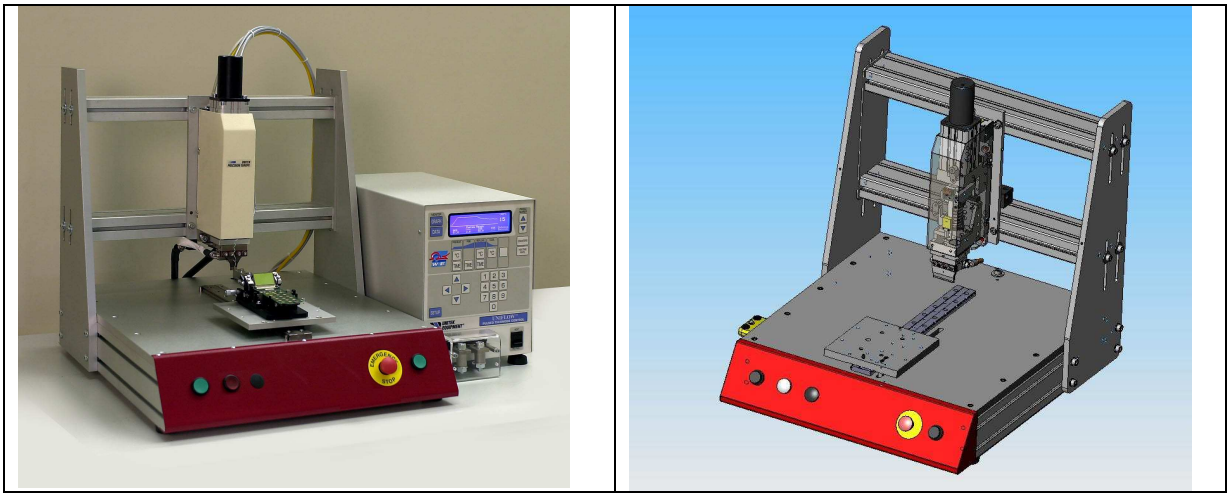
The DT-350 is a Uni-slide system where the parts are positioned on a fixture that can be moved pneumatically through front and rear locked positions. It is supplied with an anodised aluminium base plate that has a pattern of holes drilled and tapped into it. This hole pattern accepts a Miyachi fixture base plate, which is customer dependent and is mounted with bolts and dowel pins.

The front position is used for loading, positioning and subsequent unloading after processing and the rear position for the bonding process.

Operation of the two hand controls moves the slide between the front and rear positions. When the correct position is reached, the slide automatically locks into place.

For safety reasons, a sensor checks if the slide is in the correct position for the bonding process. Only then can the process cycle can be started with the two hand control.

3.7 DT-360 SYSTEM DESCRIPTION



The illustrations above show a system with pulsed heat. PLC and constant heat systems are shown later.

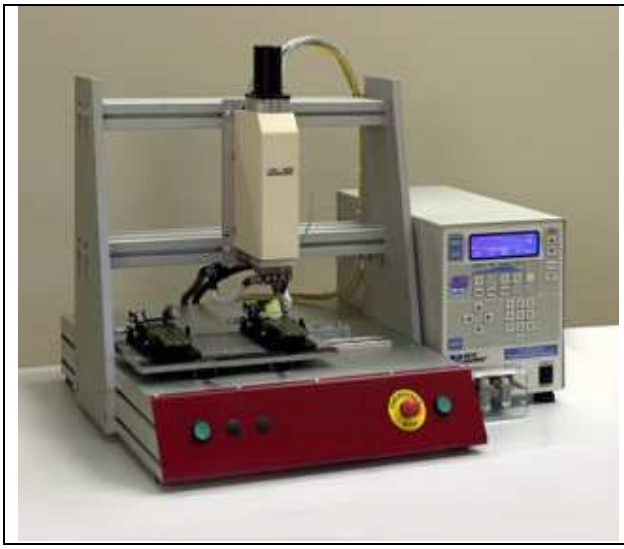
The DT-360 is a Uni-slide system where the parts are positioned on a fixture that can be moved pneumatically through a front and two rear locked positions. It is supplied with an anodised aluminium base plate that has a pattern of holes drilled and tapped into it. This hole pattern accepts a Miyachi fixture base plate, which is customer dependent and is mounted with bolts and dowel pins.

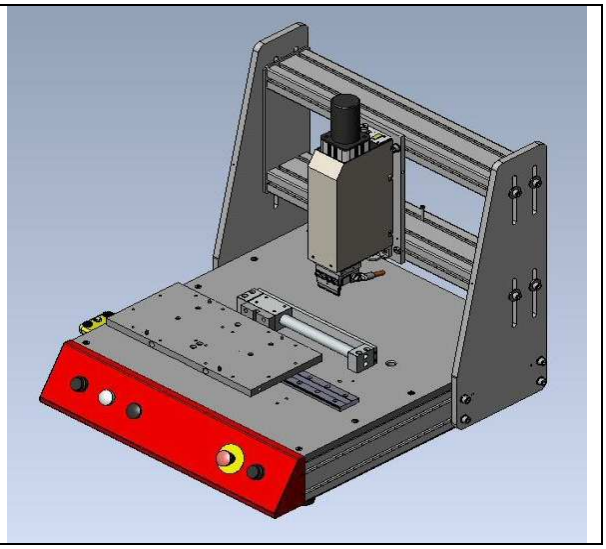
The front position is used for loading, positioning and subsequent unloading after processing and the two rear positions for two separate bonding processes.

Operation of the two hand controls moves the slide between the front and first rear positions. When the bonding process at the first position is completed, the slide moves automatically to the second rear position. Again, when the correct position is reached, the slide automatically locks into place.

For safety reasons, two separate sensors check if the slide is in the correct position for the bonding processes. Only then can the process cycle can be started with the two hand control.

3.8 DT-370 SYSTEM DESCRIPTION





The DT-370 is a Uni-Slide systems with a left-right slide. It is supplied with an anodised aluminium base plate that has a pattern of holes drilled and tapped into it. This hole pattern accepts a Miyachi fixture base plate, which is customer dependent and is mounted with bolts and dowel pins.

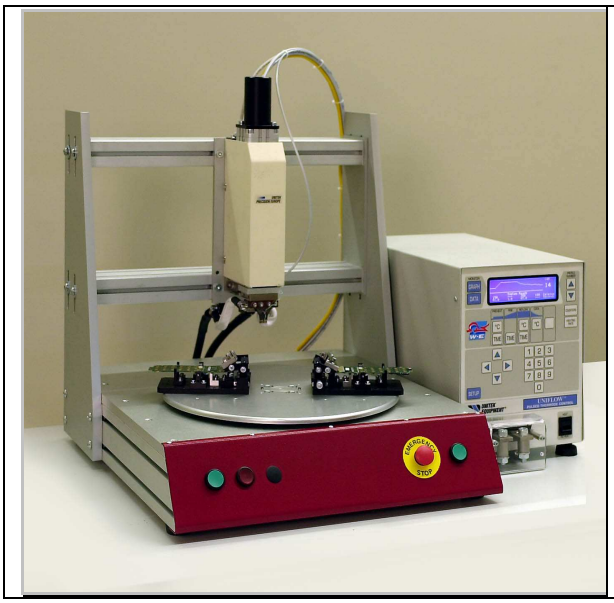
The left-right slide makes it possible to load, position and unload parts in one position while the bonding process takes place in the other position. This increases the output of the slide system.

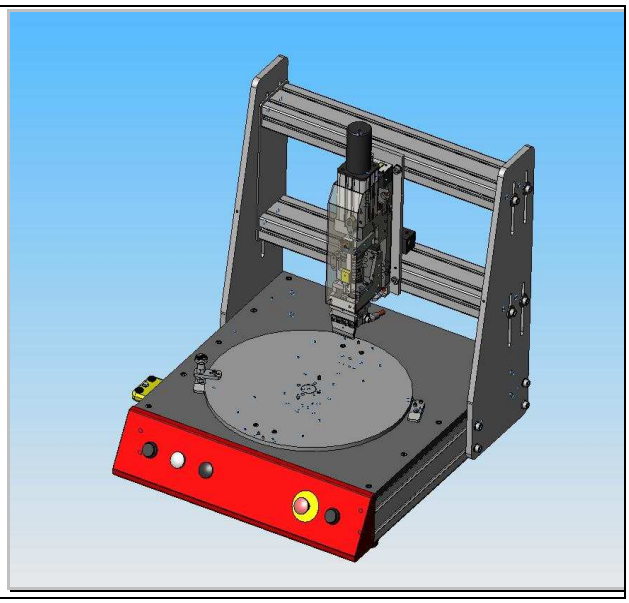
The parts are loaded with the fixture in the left or right positions. When the slide is pneumatically moved to each position it automatically locks into place. The next set of parts can be loaded while processing takes place on the other.

Operation of the two hand controls moves the slide between the left and right . When the bonding process at the first position is completed, operation of the two hand controls moves the slide to the second position. Again, when the correct position is reached, the slide automatically locks into place.

For safety reasons, a sensor checks if the slide is in the correct position for the bonding process. Only then can the process cycle be started with the two hand control. Two separate sensors are mounted and with these, independent process settings for both bonding positions can be automatically recalled.

3.9 DT-450 SYSTEM DESCRIPTION





The DT-440 is a Uni-Turn systems with a pneumatically turntable. The rotary table enables the easy loading, positioning and unloading of the parts. This is done with the fixture at the front of the turntable. The fixture is then automatically rotated to the rear position to bond the parts.

For safety reasons, a sensor checks if the table is in the correct position for the bonding process. Only then can the process cycle be started. After the turntable is turned 180 deg, the thermode is positioned exactly above the bonding area. The rotation limits are set at Miyachi.

4 INSTALLATION

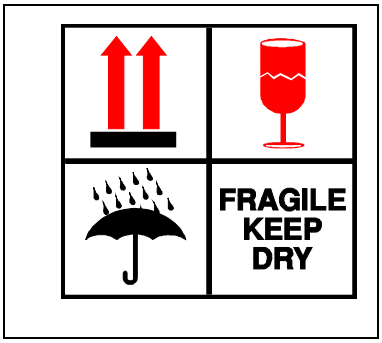
4.1 TRANSPORTATION

The system can easily be transported by two persons, after the separate units are disconnected.

	**CAUTION** **The transportation and handling of the desktop system must be carried out carefully to avoid any damage.**

The Desktop system will arrive in a crate. This packaging should be opened carefully.

Follow the steps in section to allow for the safe removal of the system from the shipping crate.



4.2 INSTALLATION

This section describes the installation and adjustment of the Desktop system and is only to be carried out by qualified technicians.

	**NOTE:** **The illustrations that follow may not be exactly the same as your system, but the process is the same.**

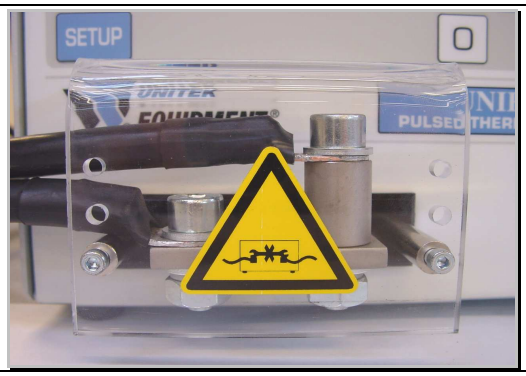
	**CAUTION** **The installation and adjustment of the desktop system must only be carried out by a technically trained person.**

1. Remove packaging materials without causing litter in the adjacent areas.
2. Check the unit for possible damage. If any damage is found, contact your supplier.

3. Remove the cable tie from the head.
4. Do a check of the installation area.
5. Install the machine on a level surface and locate the units in an orderly manner.

	**CAUTION** **The cables must be connected correctly to ensure optimal current flow.**

6. Remove the Uniflow cable cover, if applicable.

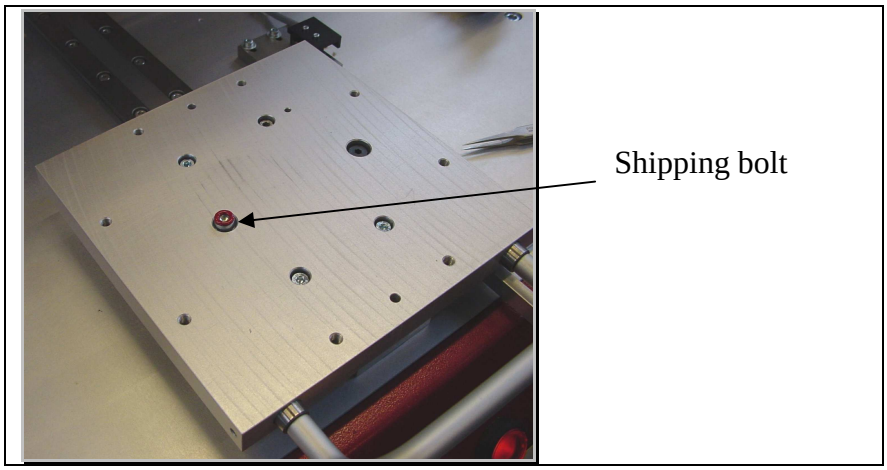


7. Clean the cable connectors.
8. Connect the two thermode power cables. Make sure you connect them with the correct nuts and washers.
9. Connect the system and the Uniflow to the electrical power supply. The unit requires one of the following power sources, depending on the country:
   - 230 Vac 50/60 Hz 1-Phase power supply (Europe)
   - 208 Vac 50/60 Hz 2- Phase power supply (US)
   - 120 Vac 50/60 Hz 1- Phase power supply (US).

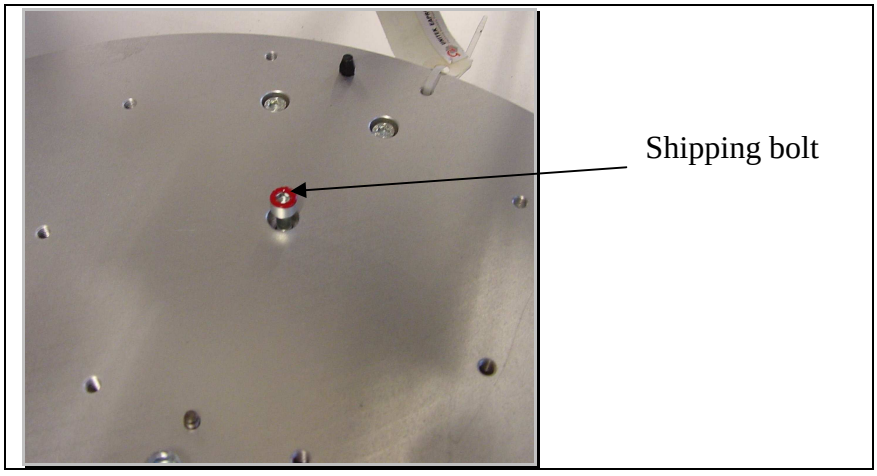
	**NOTE:** **The supply must be protected by fuses. Before switching on the unit, make sure the voltage and frequency given on the type label of the unit are in accordance with the local power supply**

	**NOTE:** **If constant heat control is installed, the TTM-04 control panel is as shown below. If this is installed, it is essential that the earth connection of the controller is connected to the thermode.**

10. Connect the unit to the compressed air system. The connection is located at the right rear of the Desktop system.
11. Make sure the unit is supplied with constant dry, clean air (6 +/- 0.5 bar). The system will work at a minimum pressure of 5.0 bar, but the pressure must not go below this level. A shut off valve must be used to isolate the Desktop system from the compressed air system.



12. For DT-350, DT-360 and DT-370 systems, if the system is delivered without product supports, **make sure you remove the shipping bolt.**



13. For DT-450 systems, if the system is delivered without product supports, **make sure you remove the shipping bolt**.
14. If the customer product supports are installed, remove the cable ties that lock the turntable or fixtures and shipping bolt..

After completion of the installation and adjustment of the system, all the employees concerned must be trained by the installer with regard to:

- construction
- supervision
- functioning of the system
- maintenance

- safety measures
- specifications

All of this information is provided in this user manual.

	**NOTE:** **Put this manual so that it is easily available when the unit is in operation.**

	**CAUTION:** **If the system is removed and then installed in another place the safety measures described in this chapter must to be taken into account.**

4.3 POST INSTALLATION ADJUSTMENT INSTRUCTIONS

This section describes the post-installation adjustment of the Desktop system and is only to be carried out by qualified technicians.

4.3.1 DT-350 and 260 systems

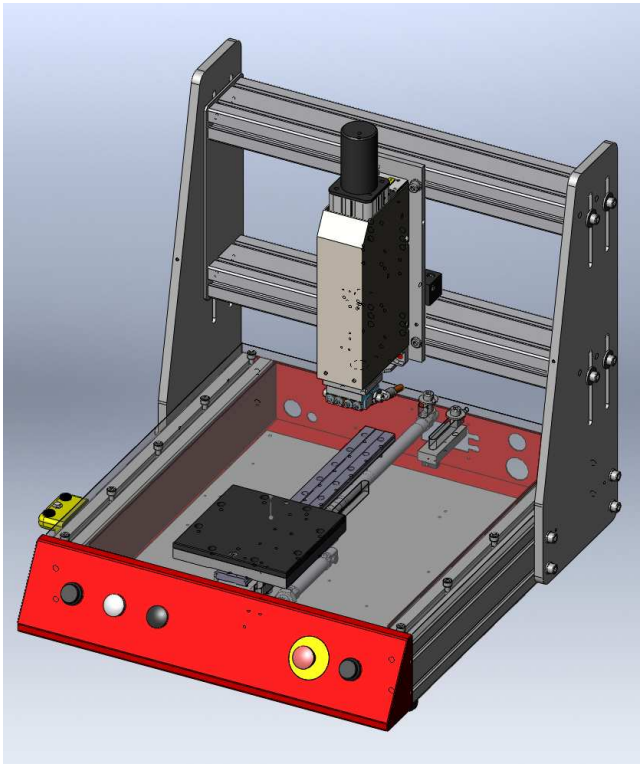
The adjustments of the Bond head are done in accordance with the applicable manual: 69H0082 (80N) or 69H0504 (500N).

The front and rear position adjustment is done before shipment. Miyachi trained persons can do small adjustments according to the customer's settings.

The height adjustment is set before shipment. If the customer supplies a product support, the necessary settings are made and the results recorded. If no product support is provided, the thermode height is set at approximately 40mm above the base plate.

4.3.1.1 Front to rear adjustments for the slideslide

The next figures describes the mechanical adjustment of the pneumatic front/rear slide with 3 positions (DT-360).

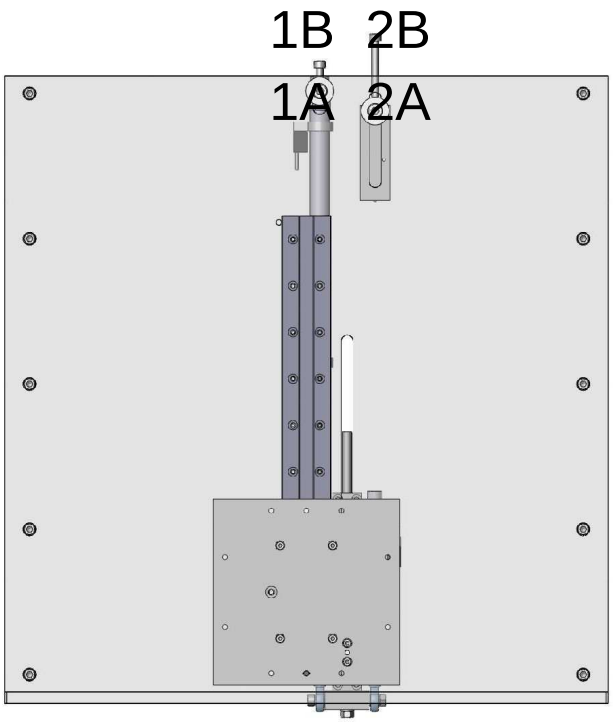


Make sure the system air pressure is set to on.

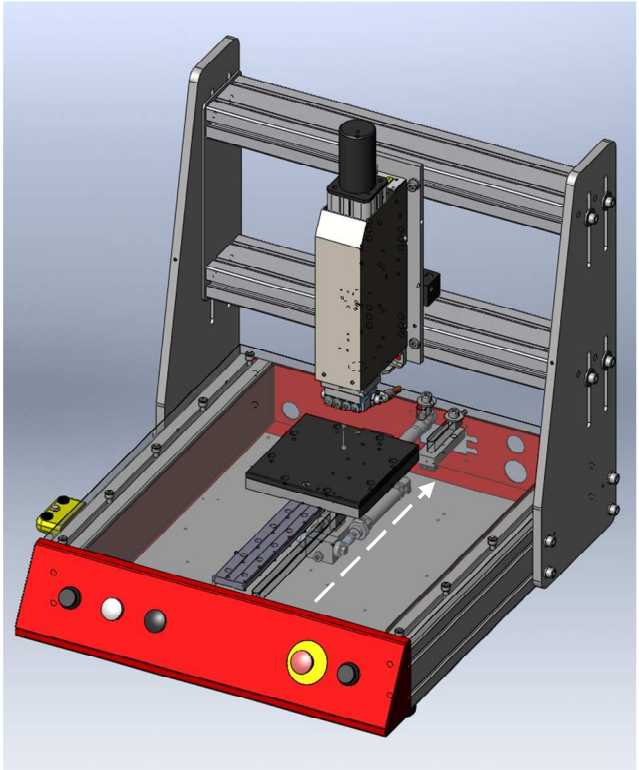
Position 1: Inlay position (operator side)

Status:

- Long cylinder: out
- Short cylinder: in



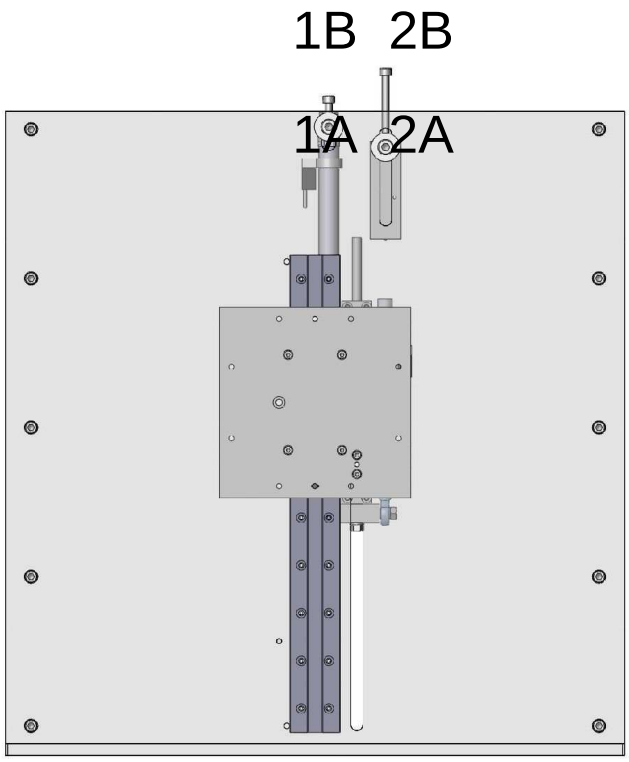
Install and tighten bolt 1A at the end of the slotted hole



Position 2: first heat-seal/bond position (under thermode)

Status:

- Long cylinder: in
- Short cylinder: in

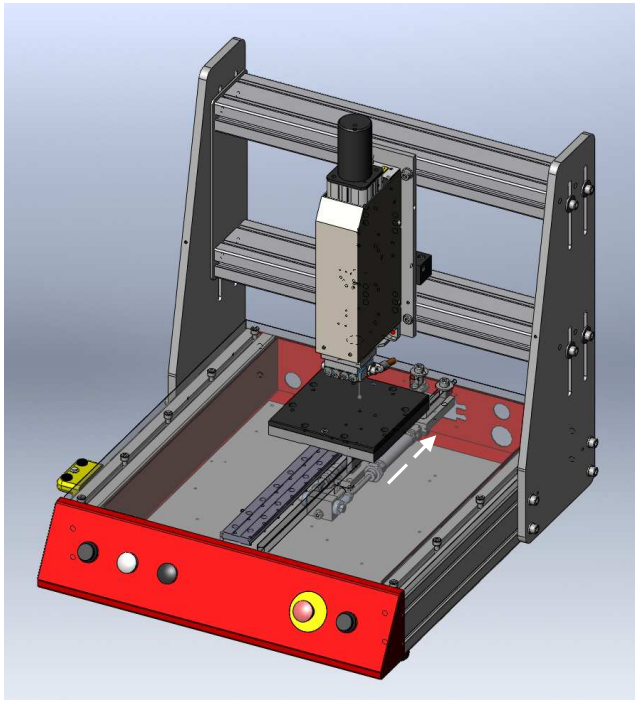


Activate the long cylinder
Make sure the thermode position is correctly set.on the first bond position

Note: The thermode position is similar or at the back of the bond position*!*

Fine adjustment to the front is possible:

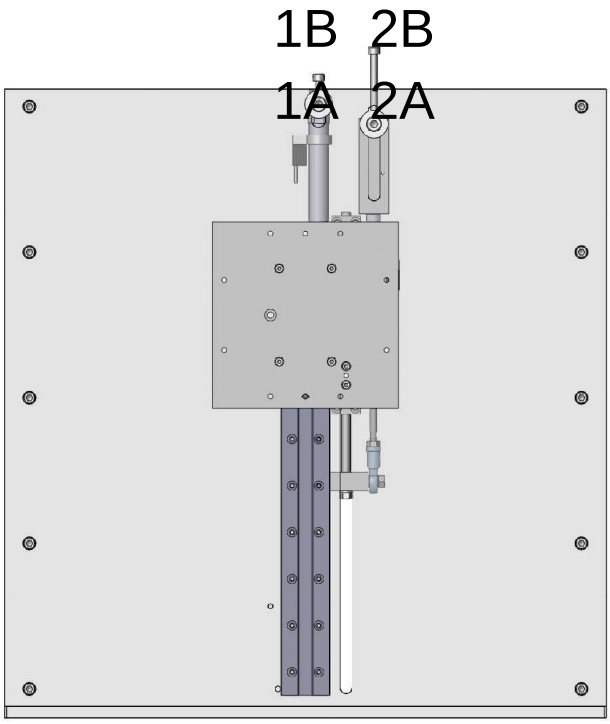
1. Loosen bolt 1A
2. Turn in bolt 1B in until desired thermode position is reached
3. Tighten bolt 1A



Position 3: second heat-seal/bond position (under thermode)

Status:

- Long cylinder: in
- Short cylinder: out

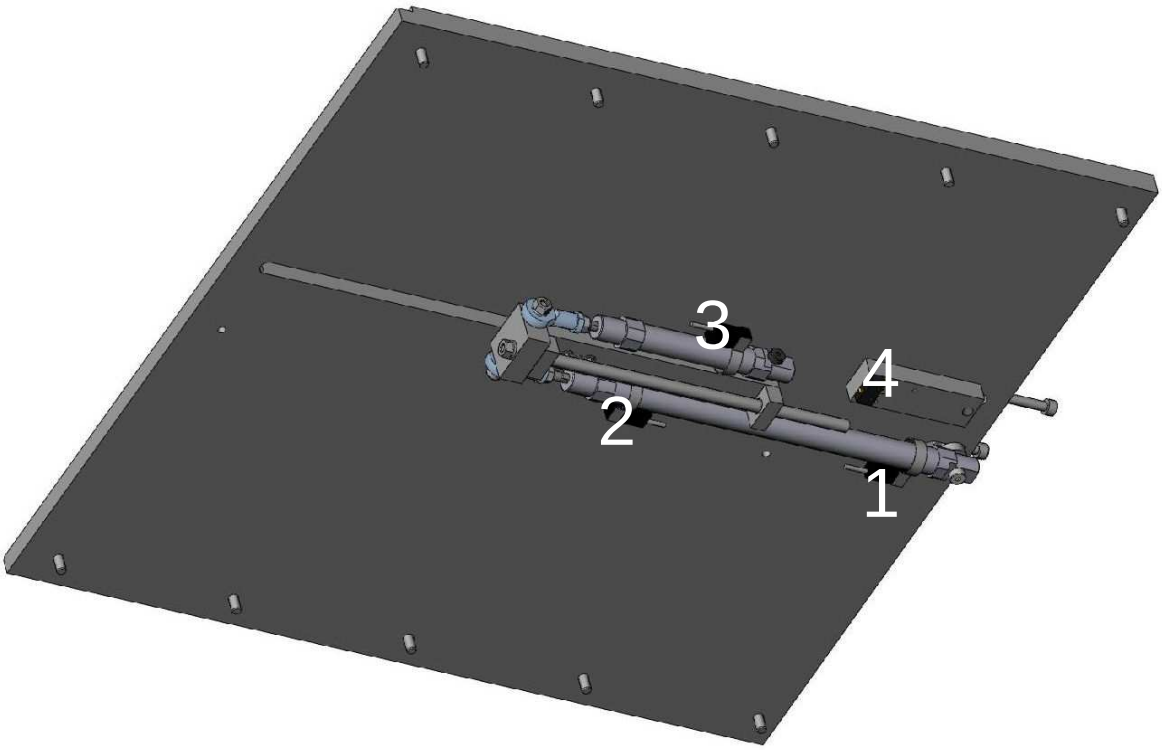


Activate the short cylinder

Install and tighten bolt 2A at the end of the slotted hole

1. Loosen bolt 2A
2. Turn in bolt 2B in until desired thermode position is reached (Max. 50mm)
3. Tighten bolt 2A

4.3.1.2 Sensor adjustment slide cylinders:



1. Sensor long cylinder in
2. Sensor long cylinder out
3. Sensor short cylinder in
4. Micro switch short cylinder out (start head)

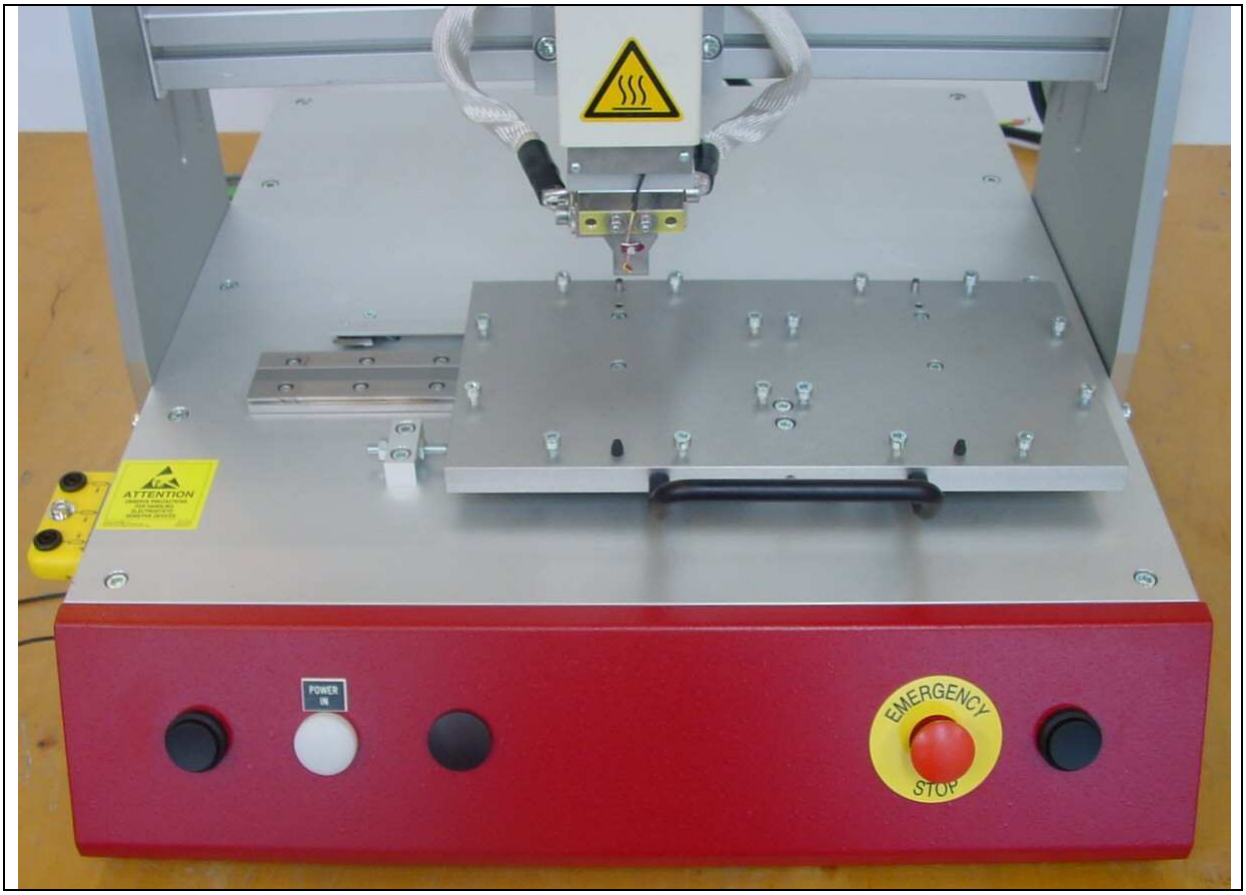
4.3.2 DT-370 systems

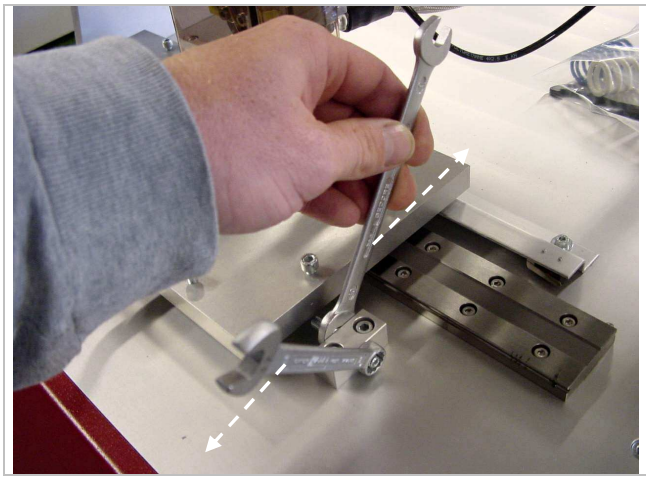
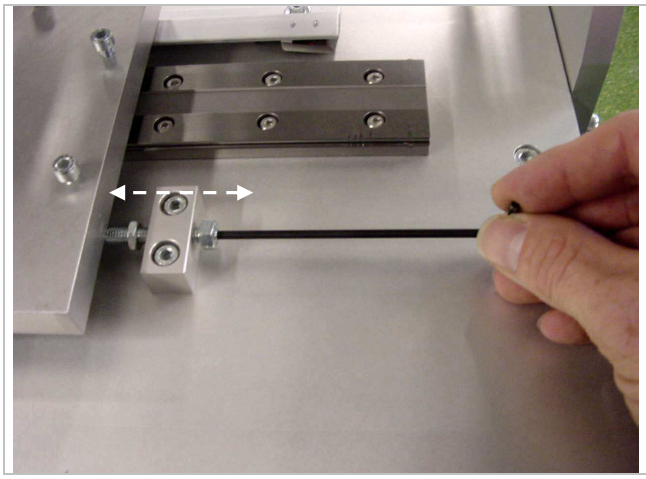
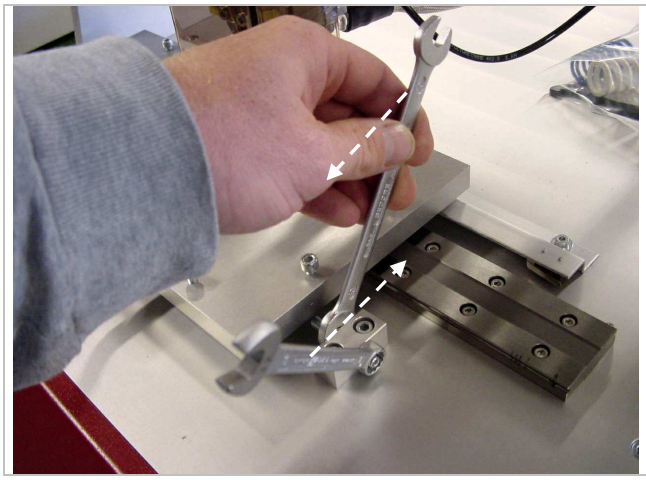
The adjustments of the Bond head are done in accordance with the applicable manual: 69H0082 (80N0 or 69H0504 (500N).

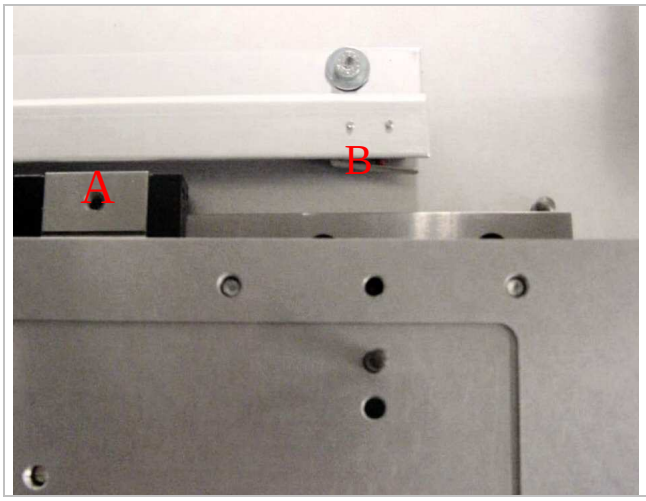
The height adjustment is set before shipment. If the customer supplies a product support, the necessary settings are made and the results recorded. If no product support is provided, the thermode height is set at approximately 40mm above the base plate.

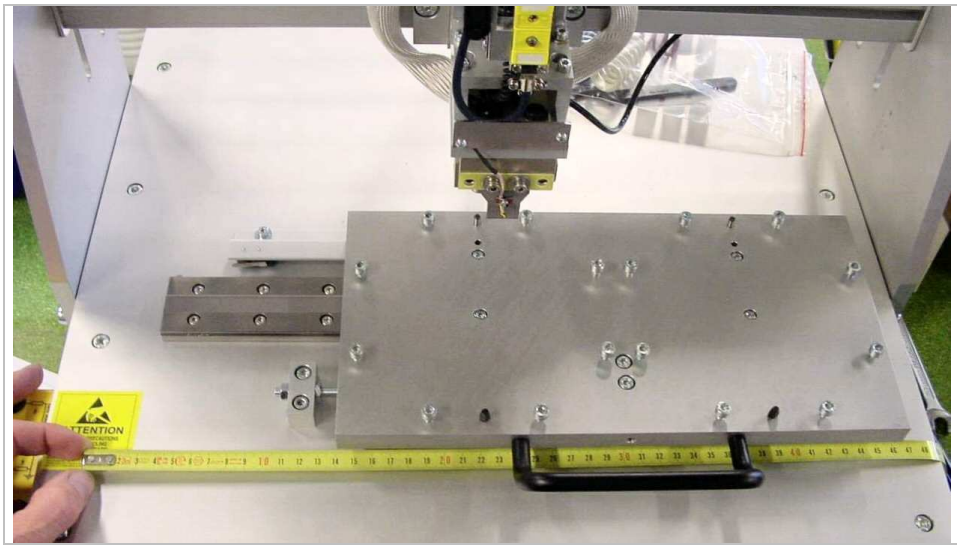
The left and right position adjustment is done before shipment. However, Miyachi trained persons can do small adjustments according to the customer's settings. Do the steps that follow to adjust the left/right positions.

The illustrations that follow show the manual version. The adjustment procedures are the same for the pneumatic version.



	Loosen both nuts to release the adjustment screw.
	Turn the screw to adjust stroke by screw Note: Adjustments can be made with two adjustment screws; left and right of the stroke
	After adjustment tighten both nuts to lock the adjustment screw.

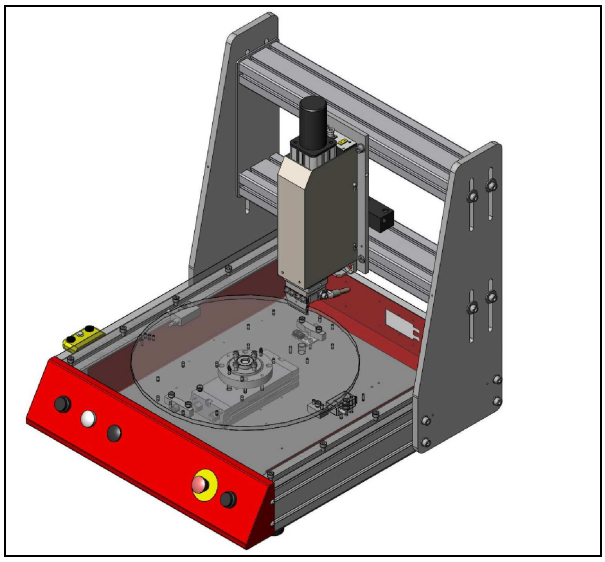
	Make sure the roller (A) that activates the micro switch (B) cannot pass the lever. Note: This will damage the micro switch.

	The left to right movement of the slide is 140 mm

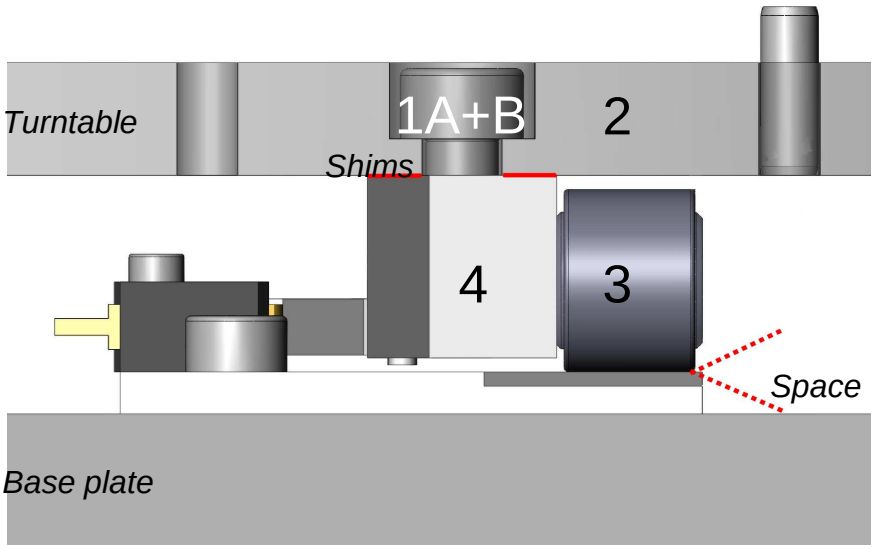
4.3.3 DT-450 systems

Do the adjustments of the Bond head in accordance with the applicable manual: 69H0082 (80N) or 69H0504 (500N).

The turntable stop positions are set on production. If no product support is provided, the thermode height is set at approximately 40mm above the turntable. The steps that follow show how to set the turntable height. Further adjustments can be made by Miyachi trained persons.

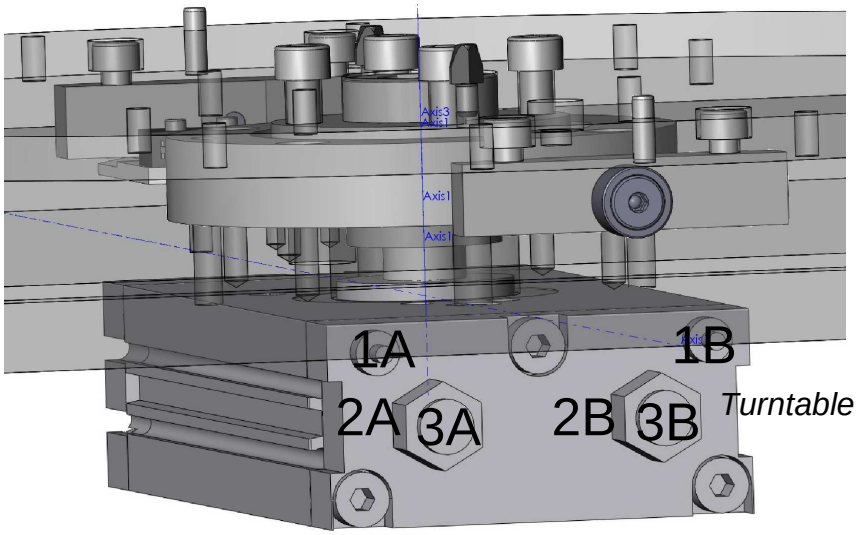


4.3.3.1 Turntable height adjustment



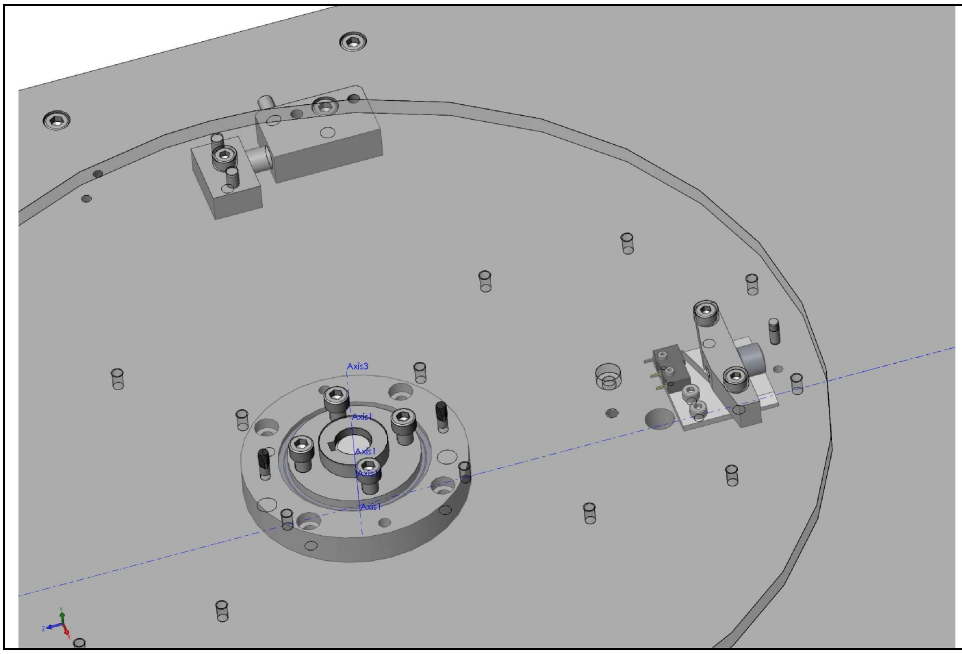
1. Turn the turntable clockwise to position 1 (operators position)
2. Use a feeler gauge to check the gap between the support surface on the base plate and the roll pin (3).
3. Turn the turntable counter-clockwise to position 2.
4. Check the gap (marked ‘Space’)’
5. If the gap > 0.01mm go to step 6. If it is not, no correction is necessary.
6. Remove the two bolts 1A and 1B.
7. Remove the block 4.
8. Fill the space with shims (refer to the red lines in figure 16)
9. Install the block 4.
10. Tighten the two bolts 1A and 1B.
11. Turn the turntable to the corrected position 1 and check the gap.
12. If necessary, repeat the shimming.
13. Do steps 6 thru 12 for the other side.

4.3.3.2 Cylinder buffer adjustment



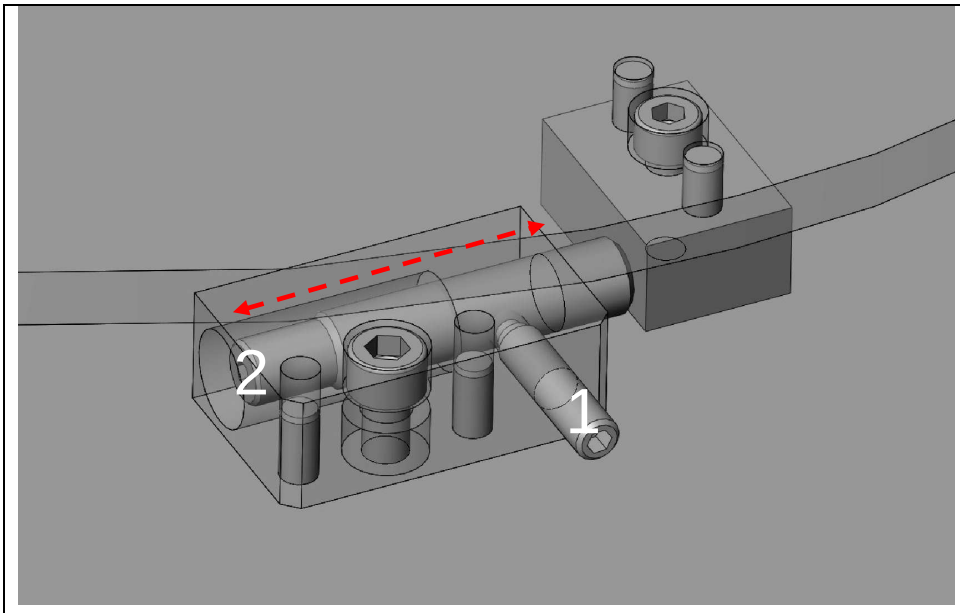
Turntable cylinder

1. Turn buffers 1A and 1B out until buffers are deactivated
2. Loosen hexagon nuts 2A and 2B
3. Turn the socket headed screw 3A and 3B out until the turntable turns more than 180 degrees (clockwise and counter-clockwise)
4. Tighten hexagon nuts 2A and 2B

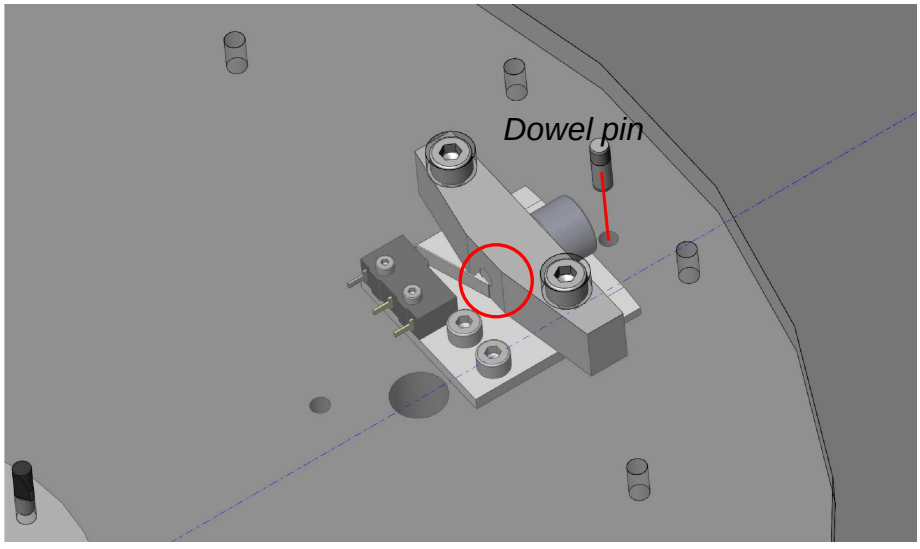


5. Turn the turntable clockwise, position 1 (see figure 19).

4.3.3.3 End position adjustment



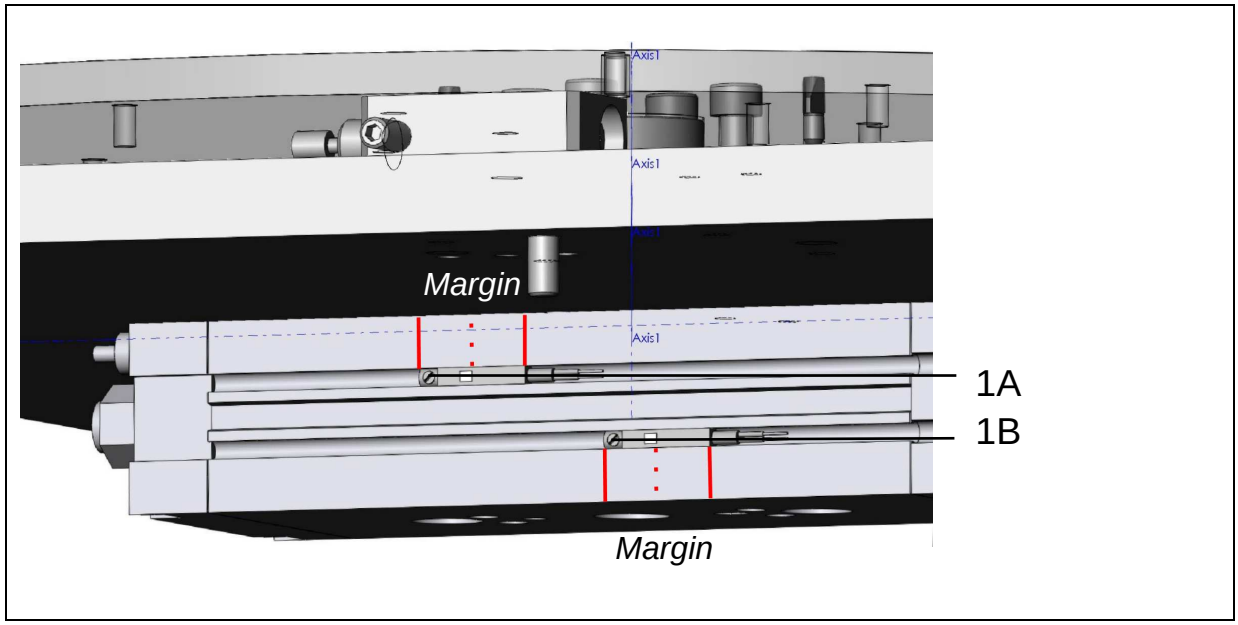
1. Loosen lock bolt 1
2. Turn in/out adjustment bolt 2 until dowel pin fits into hole (see figure 21)



3. Tighten lock bolt 1
4. Turn the turntable anti-clockwise, position 2
5. Repeat step 1 thru 3 for the other side
6. Make sure when the turntable is in position 1 or 2, the dowel pin fits into the hole.

7. Check the operation of the micro switch PLC input (LED light) in the process position.

4.3.3.4 Sensor adjustment



1. Turn the turntable clockwise to position 1.
2. Loosen screw 1A.
3. Adjust the sensor until it is in the middle of the margin (see figure 22).
4. Check the operation of the sensor PLC input (LED light) position 1.
5. Tighten screw 1A.
6. Turn the turntable counter-clockwise to position 2.
7. Loosen screw 1B.
8. Adjust correct sensor until it is in the middle of the margin.
9. Check the operation of the sensor PLC input (LED light).
10. Tighten screw 1B.

5 THE CONTROL PANELS

	**CAUTION** **The desktop system may only be operated if all components are completely and correctly installed.**

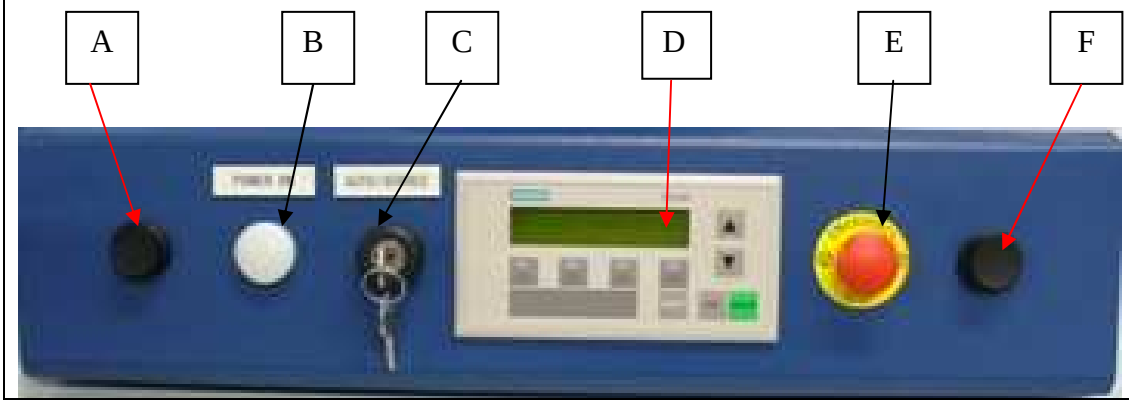
Before the Desktop system is operated, it must first be installed and adjusted in accordance with the instructions in chapter 4.

5.1 MAIN CONTROL PANEL

A. Left button two-hand control
B. Power In indicator
C. Emergency switch
D. Right button two-hand control

5.2 MAIN CONTROL PANEL (TD200 HEAT CONTROL)

In this system, both the Uniflow control panel and the TD200 control panel control the heat.



A. Left button two-hand control
B. Power In indicator
C. Service key switch
D. TD200 screen/display (also called Human Machine Interface (HMI))
E. Emergency switch
F. Right button two-hand control

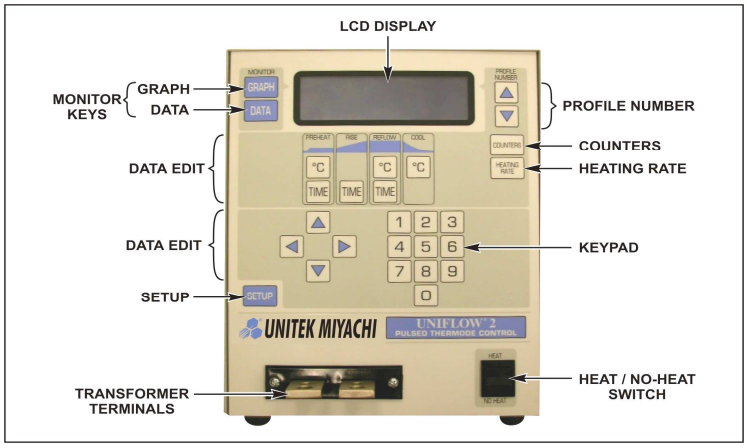
5.3 CONSTANT HEAT CONTROL PANEL

If constant heat control is installed, the TTM-04 control panel is as shown below. It can be installed at various positions on the system. It is essential that the earth connection of the controller is connected to the thermode.

Refer to the TOHO TTM-004 manual for setting instructions.

5.4 UNIFLOW CONTROL PANEL

This control panel is used to enter and readout parameters for the joining characteristics (specific temperature time cycle).



Refer to the Uniflow operating manual to set the parameters.

5.5 TD200 CONTROL PANEL

Figure 1: TD200 control panel

Press **[ESC]** to go to a main menu (for example: “Parameters ACF menu”)
Press **[ESC]** again to go to the “display alarms menu” to readout the alarms
Press **[ESC]** again to go to the “production menu” to start production

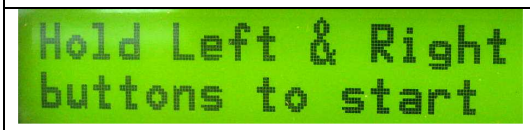
5.5.1 TD200 keys

Keys	Description
[F1...F8]	Function keys. These keys correspond with the displayed text (functions ore movements). The function of the keys depends on the displayed function.
[▲] [▼]	By means of these keys you can switch, within a menu, to the following or the previous display.
[ESC]	By means of this key you can return to the main menu.
[SHIFT]	Not used

[ENTER]	Enter key to store the entered values into the RAM memory.

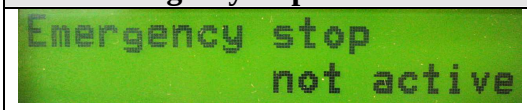
For further details refer to the TD200 controller manual .

5.5.2 TD200 screens DT-350, DT-360, DT-370

2.1 START PROCESS MODE	
	After switching on the system: Software version readout and "initialisation" message.
	Main production screen. Press **[ENTER]** to go to the start process screen:
	To start production: Press the two hand control simultaneously until head moves downwards. OR Press **[▼]** to go to the next screen:
	Enter, by means of the numeric keys, the required number of cycles for the required length of tape feed. Press **[▼]** to go to the next screen:
	Enter, by means of the numeric keys, the required number of products within which the tape feed has to joggle. Press **[▼]** to go to the next screen:
	Press **[▼]** or **[▲]** to go to time set by Uniflow. (Time set is always 0) Time set is adjustable only by constant heat version.
	Message "busy" after firing of the head / starting Uniflow. ***Warning; when the Uniflow is turned OFF, message "busy" will stay on the screen!***

2.2 MANUAL CONTROL	
	In this mode it is possible to test the two-hand control and activate the different cylinders or generate a start to the Uniflow
 	**Key switch in production:** Test hand control disabled **Key switch in service:** Press the two hand control simultaneously to test the buttons Press **[▼]** to go to the next screen:

2.2.1 Slide manual	
 	**Key switch in production:** Slide control disabled **Key switch in service:** Press **[F1]** to activate the slide (cylinder) Status Pos. 1: Inlay/dispense position is reached Status Pos. 2: Head/heat-seal position is reached Press **[▼]** to go to the next screen:
2.2.2 Head manual	
 	**Key switch in production:** Head control disabled **Key switch in service:** Press **[F1]** to activate the head (cylinder) Status Home: home-level is reached Status Fire: fire-level is reached Press **[▼]** to go to the next screen:
2.2.3 Tape manual	
 	**Key switch in production:** Tape control disabled **Key switch in service:** Press **[F1]** to activate the slide (cylinder) Status Pos. 1: Inlay/dispense position is reached Status Pos. 2: Head/heat-seal position is reached Press **[▼]** to go to the next screen:

2.2.4 Emergency stop manual	
 	**Emergency stop** Emergency stop pushed by operator or generated by Uniflow Status: “active” or “ not active” **Internal E-stop** Emergency stop generated by PLC software Status: “active” or “ not active” Press **[▼]** to go to the next screen:
2.2.5 Uniflow manual	
 	**Key switch in production:** Uniflow control disabled **Key switch in service:** Press **[F1]** to start the Uniflow power source ***Warning; the Uniflow will heat up automatically after pressing [F1]!*** Status: • Ready • Busy • Alarm Press **[▼]** to go to the next screen:
2.2.6 Bond positions	
 	**Key switch in production:** Bond positions disabled **Key switch in service:** Press **[F1]** to choose between 1 or 2 bond positions

Press **[ESC]** to go to a main menu (for example: “Parameters menu”)
Press **[ESC]** again to go to the “display alarms menu” to readout the alarms
Press **[Enter]** to go to acknowledge the alarms.

2.3 SETTINGS MODE

In this mode it is possible to set the type of machine:
Press **[▼]** to go to the next screen:

Key switch in production:
Machine type settings disabled.

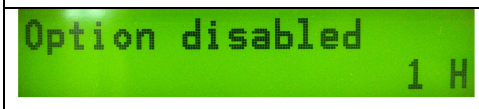
Key switch in service:
Press **[enter]** to set or change the type of machine.

Number:	Type:
150-	No movement
250-	2-position manual front-rear slide No movement
260-	3-position manual front-rear slide No movement
270-	2-position manual left-right slide
350-	2-position pneumatic slide
360-	3-position pneumatic slide
370-	2-position pneumatic left-right slide
440-	Manual rotary table No movement
450-	Pneumatic rotary table
-PH	Pulsed Heat
-CH	Constant Heat

Note: manual movement has no TD200

Press **[F1]** for pulsed heat
Press **[F2]** for constant heat
Press **[▼]** to go to the next screen:

Press **[F1]** for DT 350
Press **[F2]** for DT 360
Press **[F3]** for DT 370
Press **[F4]** for DT 450
Press **[▼]** to go to the next screen:



Time set (sleeping mode) is adjustable only by constant heat version.
Press **[▼]** to go to the next screen:

	Readout current settings. Press **[▼]** to go to the first screen again:

2.4 TD200 MODE	
  	Press **[▼]** or **[▲]** to select the desired menu: • Operator Menu • Diagnostic Menu • Display Alarms Press **[enter]** to confirm The operator and diagnostic menu are TD200 panel menu's and don't need any adjustments. Readout the alarms; see next section

5.5.3 <u>Failure messages DT-350, DT-360, DT-370</u>

Press 2x **[ESC]** (in manual mode) to go to "display alarms menu" to readout alarms.
Press **[ENTER]** (in the manual mode) to acknowledge the alarms.

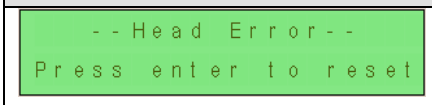
EMERGENCY STOP:

ERROR	DESCRIPTION	CHECK
	Operator has pressed the emergency stop button or Error Uniflow or PLC	Emergency stop Uniflow (operator manual) PLC

UNIFLOW:

ERROR	DESCRIPTION	CHECK
	**<u>Time-out:</u>** Uniflow is not responding within # seconds after start signal **<u>Alarm:</u>** Uniflow error	Working fire-switch Z-movement head Wiring / connectors Uniflow (operator manual)

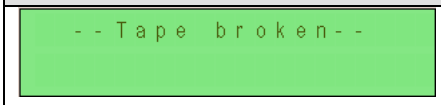
HEAD:

ERROR	DESCRIPTION	CHECK
	Head must be in upper/lower position within # seconds	Air pressure Sensors head Working head
	Head is in lower position while slide activated	Working fire-switch Z-movement head Sensors slide Wiring / connectors

SLIDE:

ERROR	DESCRIPTION	CHECK
	Slide must be in front/rear position within # seconds	Air pressure Sensors slide Working slide
	Slide is in rear position while head activated	Working fire-switch Z-movement head Sensors slide Wiring / connectors

TAPE:

ERROR	DESCRIPTION	CHECK
	Tape-end sensor is activated; tape is empty or broken.	Tape Tape-end sensor

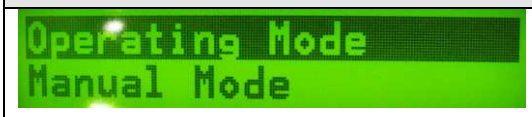
***LIGHTCURTAIN:**

ERROR	DESCRIPTION	CHECK
	Only in production mode! Light curtain is interrupted.	

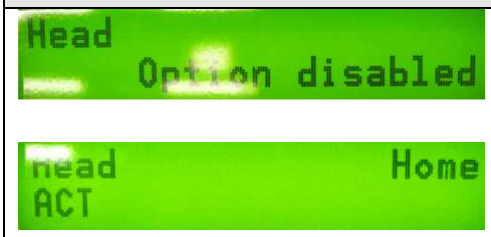
**Light curtain message will only appear in production mode, NOT in service mode and when firing switch is activated (start Uniflow) in production mode.*

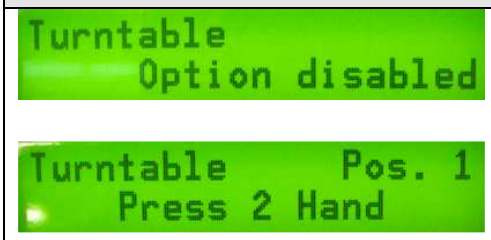
5.5.4 TD200 screens DT-450 (General)

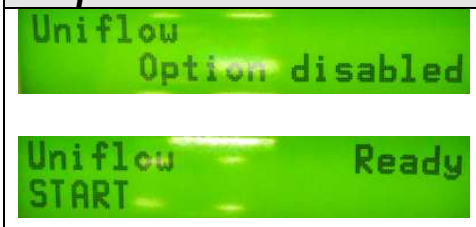
MAIN	
	Productions screen shows current status: • Ready • Not ready • Error • Producing Press **[▼]** to go to the next screen:
	Press the two hand control to turn the table 180 degrees to empty the fixtures Press **[▼]** to go to the next screen:
	In this operator menu the total count of products is shown Press **[▼]** to go to the first screen again

OPERATOR MODE	
	In this mode it is possible to empty the system and readout the counter Press **[▼]** or **[▲]** to select the desired mode: • Operating Mode • Manual Mode • Parameters Mode Press **[enter]** to confirm *If no activity after a certain time; the display will automatically turn to main menu again*

MANUAL MODE	
	In this mode it is possible to test the two-hand control and activate the different cylinders or generate a start to the Uniflow/Kapton tape feeder
 	**Key switch in production:** Test hand control disabled **Key switch in service:** Press the two hand control simultaneously to test the buttons Press **[▼]** to go to the next screen:

Head manual	
	**Key switch in production:** Head control disabled **Key switch in service:** Press **[F1]** to activate the head (cylinder) Status Home: home-level is reached Status Fire: fire-level is reached Press **[▼]** to go to the next screen:

Turntable manual	
	**Key switch in production:** Turntable control disabled **Key switch in service:** Press the two hand control simultaneously to activate the turntable (cylinder) Status Pos. 1: Inlay/dispense position is reached Status Pos. 2: Head/heat-seal position is reached Press **[▼]** to go to the next screen:

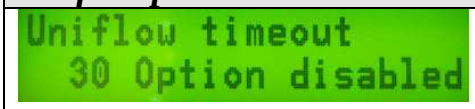
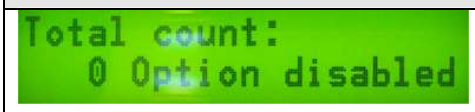
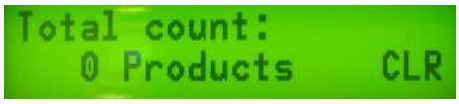
Uniflow manual	
	**Key switch in production:** Uniflow control disabled **Key switch in service:** Press **[F1]** to start the Uniflow power source ***Warning; the Uniflow will heat up automatically after pressing [F1]!*** Status: • Ready • Busy • Alarm Press **[▼]** to go to the next screen:

Tape manual	
	**Key switch in production:** Kapton tape control disabled **Key switch in service:** Press **[F1]** to start the Kapton tape unit (1 tape cycle)

	Status: • Ready • Busy • Alarm Press **[▼]** to go to the first screen again

Press **[ESC]** to go to a main menu (for example: "Parameters menu")
Press **[ESC]** again to go to the "display alarms menu" to readout the alarms
Press **[Enter]** to go to acknowledge the alarms.

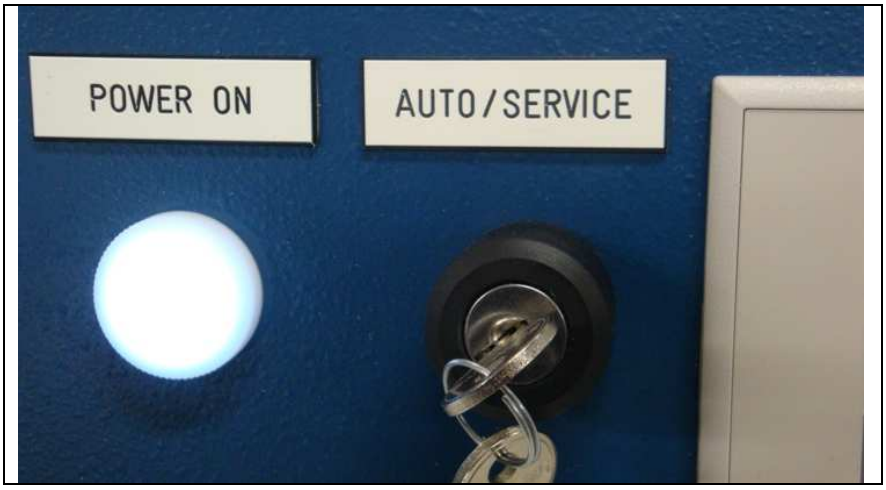
PARAMETERS MODE	
	In this mode it is possible to set and adjust the different parameters of the: • Head • Turntable • Dispense • Uniflow
Head parameters	
 	**Key switch in production:** Head parameters timeout up disabled **Key switch in service:** Press **[enter]** to change value. Press **[▼]** or **[▲]** to select the desired value, the maximum time within the head has to complete its upward movement. Press **[enter]** to confirm this value. Press **[▼]** to go to the next screen:
 	**Key switch in production:** Head parameters timeout down disabled **Key switch in service:** Press **[enter]** to change value. Press **[▼]** or **[▲]** to select the desired value, the maximum time within the head has to complete its downward movement. Press **[enter]** to confirm this value. Press **[▼]** to go to the next screen:
Turntable parameters	
 	**Key switch in production:** Turntable parameters timeout disabled **Key switch in service:** Press **[enter]** to change value. Press **[▼]** or **[▲]** to select the desired value, the maximum time within the turntable has to complete its turn (180 degrees). Press **[enter]** to confirm this value. Press **[▼]** to go to the next screen

Uniflow parameters	
 	**Key switch in production:** Uniflow parameters timeout disabled **Key switch in service:** Press **[enter]** to change value. Press **[▼]** or **[▲]** to select the desired value, the maximum time within the Uniflow power source has to respond. Press **[enter]** to confirm this value. Press **[▼]** to go to the next screen:
Counter readout	
 	**Key switch in production:** Counter parameters disabled In this manual menu the total count of products is shown and it is possible to clear this value Press **[F4]** to clear this value. Press **[▼]** to go to the first screen again

TD200 MODE	
  	Press **[▼]** or **[▲]** to select the desired menu: • Operator Menu • Diagnostic Menu • Display Alarms Press **[enter]** to confirm The operator and diagnostic menu are TD200 panel menu's and don't need any adjustments. Readout the alarms; see next section

5.5.5 TD200 screens DT-450 (Options)

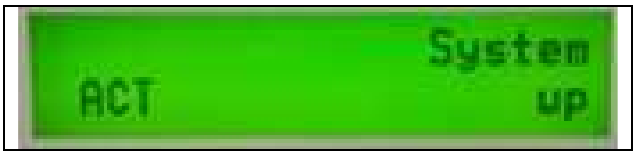
Some versions of the DT-450 have extra options. Below is a selection of TD200 optional screens.



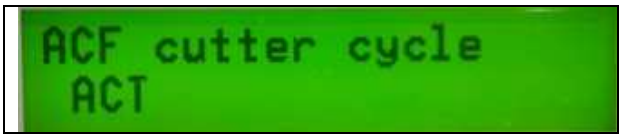
Turn the keyswitch to AUTO for production mode.

Production mode (manual)

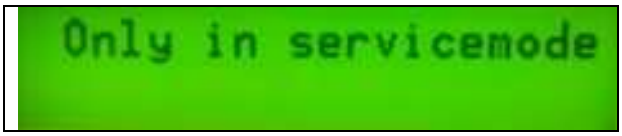
The screen below will show. Press ACT to continue.



The screens that follow guide to operator to certain functions that are self-explanatory.



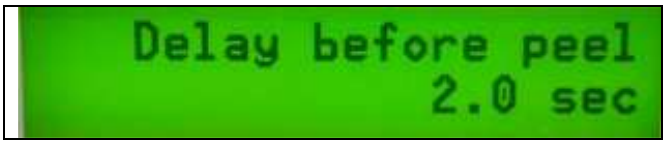

Cutter
ACT in
Peeler
ACT in
Transporter
ACT down
Open lower clamp
ACT close
Upper clamp
ACT open
Wind motor
ACT start
Unwind motor
ACT start
Pretack production
Press 2 Hand
Select prod. mode
TOGGLE End-Seal
Endseal production
Press 2 Hand



Turn the keyswitch to SERVICE for SERVICE mode.

Service mode

The screens that follow guide to operator to certain functions that are self-explanatory.



Failure messages DT-450

1. Press 2x [ESC] to go to “display alarms menu” to readout the alarms.
2. Press [ENTER] to show type of error.
3. Press [ENTER] to acknowledge the emergency stop error.

EMERGENCY STOP:

ERROR	DESCRIPTION	CHECK
Emergency stop	Operator has pressed the emergency stop button	Emergency stop

UNIFLOW:

ERROR	DESCRIPTION	CHECK

Uniflow time-out	Uniflow is not responding within # seconds after start signal	Working fire-switch Z-movement head Wiring / connectors Uniflow
Uniflow alarm	Uniflow error	See Uniflow manual

HEAD:

ERROR	DESCRIPTION	CHECK
Time out head up	Head must be in upper position within # seconds	Air pressure Sensors Working slide
Time out head down	Head must be in lower position within # seconds	Air pressure Sensors Working slide

TURNTABLE:

ERROR	DESCRIPTION	CHECK
Time-out turntable	Turntable must be in position within # seconds	Air pressure Sensors Working turntable
Illegal sensor state turntable	Sensors are activated simultaneously	Working position sensors
Fire while head up	Technical fault firing switch or manually activated the fire switch while head is home	Fire switch

KAPTON TAPE MODULE:

ERROR	DESCRIPTION	CHECK
Time out Kapton	Kapton tape must be in position within # seconds.	Air pressure Working Kapton tape module

6 GENERAL OPERATION OF THE DESKTOP SYSTEM

NOTE:
The detailed operation is customer dependent

The Desktop system is operated in combination with a two-hand control.

1. Make sure the air supply is set to on.
2. If applicable, set the vacuum supply to on.
3. On all systems, raise the Uniflow power source main switch to the on position.
4. On constant heat systems, set the main switch at the rear of the desktop to on. Make sure the correct temperature for the product cycle is set.
5. Make sure the emergency stop is deactivated. If it is not, turn it counter-clockwise to deactivate it.
6. Clean the parts to be connected.
7. Position the parts to be connected on the fixture block. Make sure they are correctly aligned with the thermode.
8. Press the two-hand control to start the bonding cycle.
9. After the bonding cycle is completed, remove the finished product.
10. Do steps 4 thru 7 for the next product.
11. When production is completed, press the emergency stop button (D, figure 9).
12. Lower the Uniflow power source main switch to the off position
13. Set the air pressure supply to off.
14. If applicable, set the vacuum supply to off.

7 MAINTENANCE AND REPAIR

7.1 ADJUSTMENTS

These are described in the related manuals, but force and speed adjustments can be done by a qualified operator.

7.2 PREVENTIVE MAINTENANCE

It is essential for high level performance of the system to do regular maintenance in accordance with the manufacturer's instructions. This will prevent unplanned downtime.

CAUTION*:*
Do not replace parts yourself but contact a qualified technician

	**WARNING*:*** **Preventive maintenance may only be done by qualified, trained persons**

The materials, parts, and tools necessary for the maintenance of the Desktop system are not provided by **Miyachi Europe Corporation**. Cleaning and preventive checks however, could identify possible problems.

Cleaning and preventive checks though could identify and prevent possible problems.

Table 7: Daily Maintenance

Item	Maintenance	Action
Fixture	- Clean and remove dust from parts:	- Use damp cloth / compressed air
Thermode	- Remove contamination: - Check plan parallelism:	- Thermode cleaning module 61W0002; - Polishing disk 69C0000 Use pressure paper 67W0003 or use low pressure paper; 67W0023
Control box	- Clean and remove dust from parts	- Disconnect system from power supply; - Use clean cloth (& tweezer).
Thermode head	- Clean and remove dust from parts:	- Disconnect system from power supply; - Use damp cloth
Power supply	- Clean and remove dust from parts:	- Disconnect system from power supply; - Use damp cloth
Emergency control system	- Make sure the complete system is disconnected from the power supply	- Press all emergency stop push buttons in sequence.

Table 8*:* Weekly Maintenance

Item	Parts	Action/maintenance
Electrical cables and wiring	- Clean and remove dust from parts - Check: - weak connections: - bad fuses: - error messages:	- Disconnect system from power supply; - Use clean cloth / clear water. - Disconnect system from power supply: - Make new / better connection. - Replace fuse. - Consult user's manual.
Sensors - Position - Mechanical functions	- Check sealing: - Bad connection:	- Disconnect system from compressed air supply; - Use appropriate tools. - Use clean cloth / compressed air.
Slides & bearings	- Clean and remove dust from parts - Rust:	- Use compressed air, clean cloth, lubricants or clean water. - Use lubricants to grease (check slide & bearing specifications!)
Mechanical connections	- Check all mechanical connections on the system:	- Use appropriate tools.
Performance	- Check positions and settings	- Consult: - setting parameters power source; - table parameter list power source - machine parameter list; - machine calibration data

Table 9: Monthly maintenance

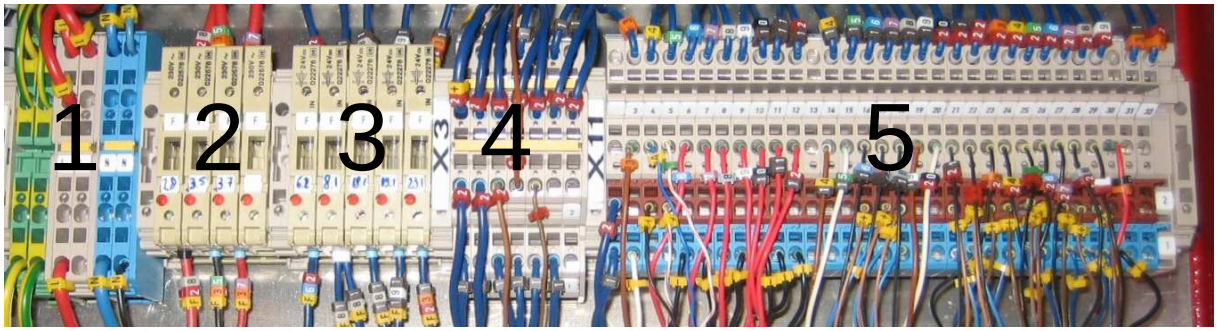
Item	Parts	Action/maintenance
Calibration	- Force calibration:	- Use load cell 67W000-0-1-2; - Consult user's manual.
	- Temperature calibration:	- Use readout 67W0007 / 67W0008 with the related Miyachi thermocouple - Consult user's manual.
	- Check plane parallelism thermode:	Use pressure paper 67W0003 or use low pressure paper 67W0023 - Consult user's manual.

7.3 TECHNICAL MAINTENANCE

7.3.1 Fuse checks

	**WARNING:** **The fuse checks may only be done by qualified, trained persons**

	**WARNING*:*** **The main switch on the rear panen must be set to the on (1) position.**



1. 230V or 120 V AC connection terminal
2. AC fuses
3. 24Vdc fuses
4. 12Vdc connection terminal X3
5. I/O connection terminal X11

If a red light shows; the glass fuse is broken. Refer to the electrical drawings for details.

8.3 Lubrication

The Desktop system has no parts that need service / adjustment / lubrication during normal operation.

WARNING:
The removal and installation of parts, technical maintenance and repair may only be done by qualified, trained persons, unless specified otherwise.

Contact **Miyachi Europe Corporation** for maintenance activities. Conditions will be provided after receipt of the information or requirements.

8 CALL MIYACHI EUROPE CORPORATION

After receipt of an emergency call at **Miyachi Europe Corporation**, the caller will be informed of the start of the action necessary to solve the problem.
At all times the first attempt at solving the problems will be by telephone with a **Miyachi Europe Corporation** authorised person. We have highly qualified technicians who can help you to solve your problem.

Miyachi Europe Corporation
Schootense Dreef 21
P.O. box 164
NL-5700 AD HELMOND
The Netherlands
Phone: +31 (0) 492 54 22 25
Fax: +31 (0) 492 53 62 22
E-mail : info@mec.miyachi.com
Internet : www.mec.miyachi.com