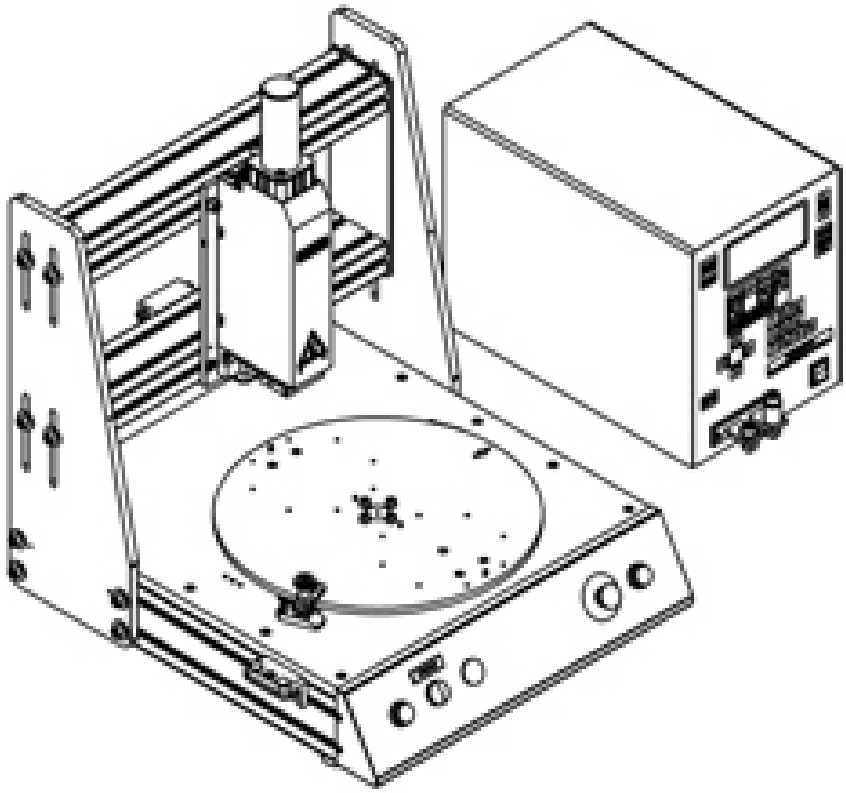
AMADA MIYACHI EUROPE

USER MANUAL
Desk Top 450 – Automatic Operation
Project number -



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Register of changes / Version control table

Register of changes

Page	Version	Date	Status	Remarks
All	1.0	April 2014	Released	New generic manual
All	1.1	February 2015		Amada details added

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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, **Amada Miyachi Europe** cannot be held responsible either for any shortcomings occurring in this user manual or for their consequences.

Author: S F Duerden

AMADA MIYACHI EUROPE

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.

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 **Amada Miyachi Europe** 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. **Amada Miyachi Europe** 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.

	**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 **Amada Miyachi Europe** 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

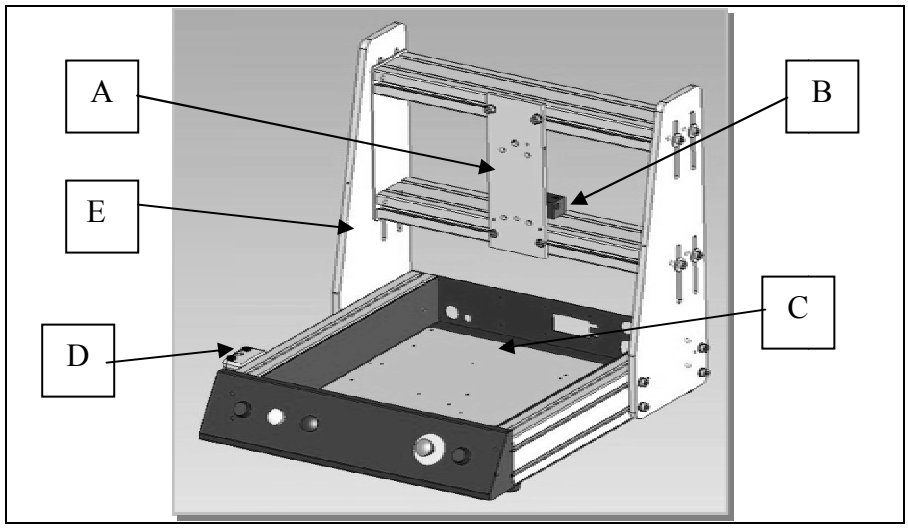
General	
Weight Joining system	40 kg / 88 lbs
Dimensions Joining system Depth Width Height	System: Heat Source: 600 mm / 23.62 Inch Dependent on 550 mm / 21.65 Inch Pulsed or constant heat 510 mm / 20.04 Inch
Maximum fixture height	80 mm / 3.15 Inch
Gantry open width	520 mm / 20.47 Inch
Fixture assembly 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.

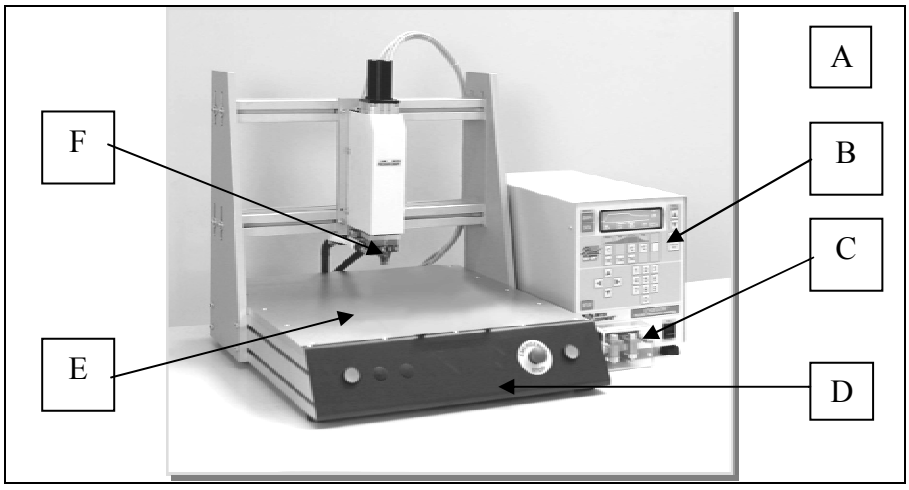
3 CONSTRUCTION

3.1 GENERAL CONSTRUCTION

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



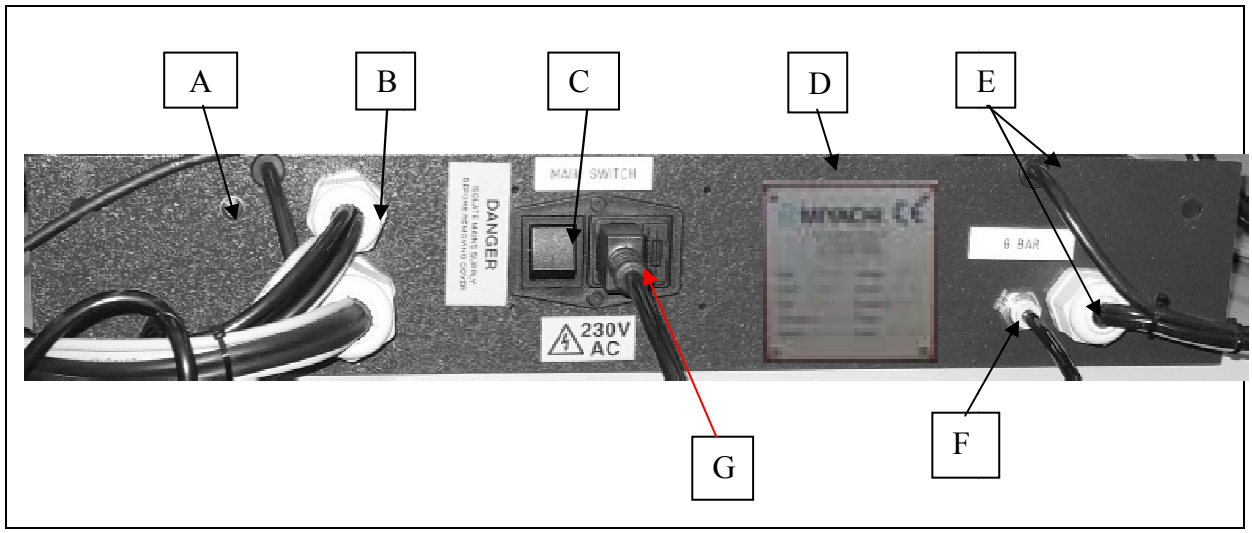
A. Left/right and rotation head adjustment plate
B. Power cable connection block
C. Electrical control drawer
D. Wrist strap earth (grounding) point
E. Portal (front/rear adjustment of the bond head)



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
G.

Note: For more details about the pneumatic bonding head, refer to manuals 69H0090 (80N) or 69H0514 (500N).

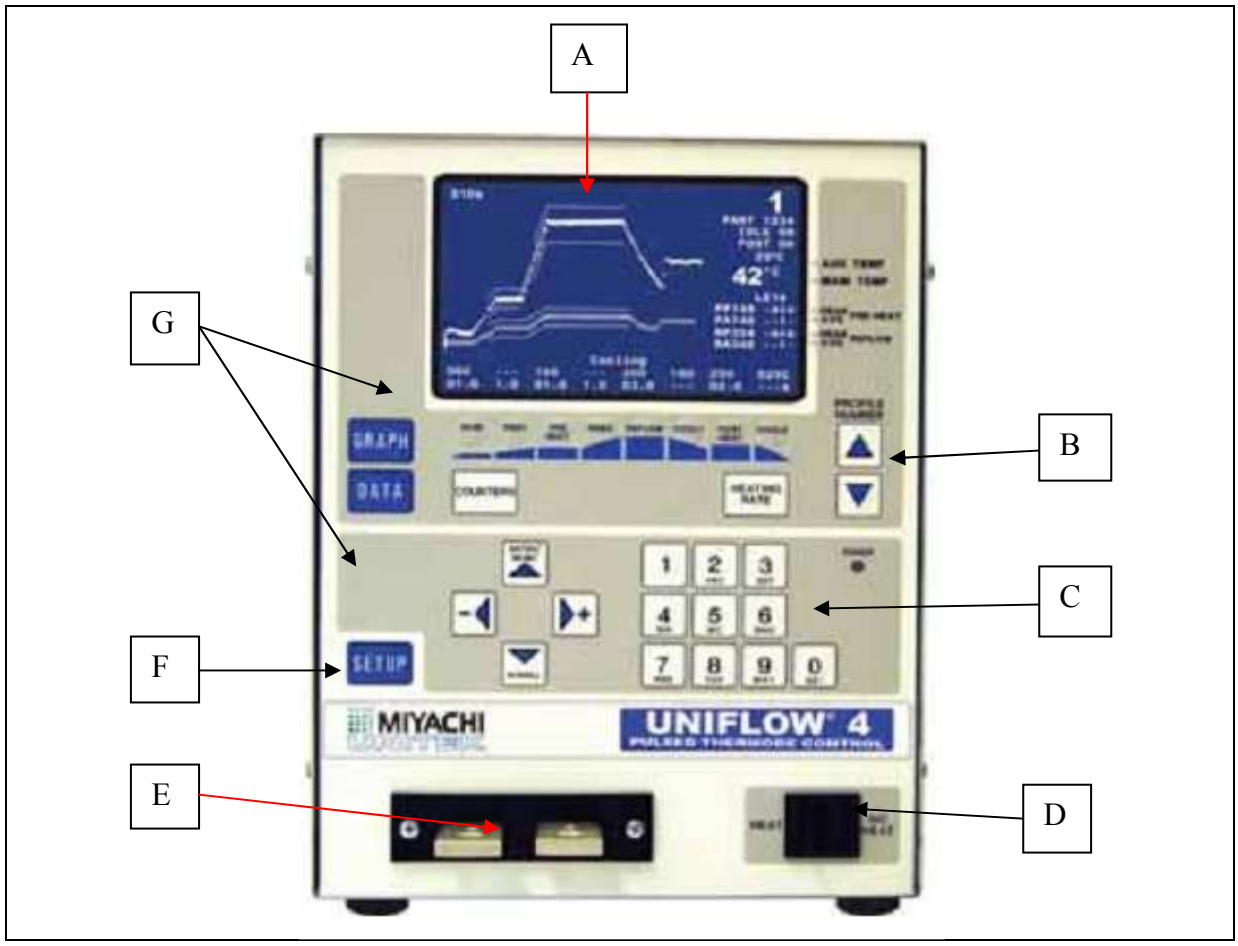
Constant heat control is an option. Various front panels are available.



Rear connection panel

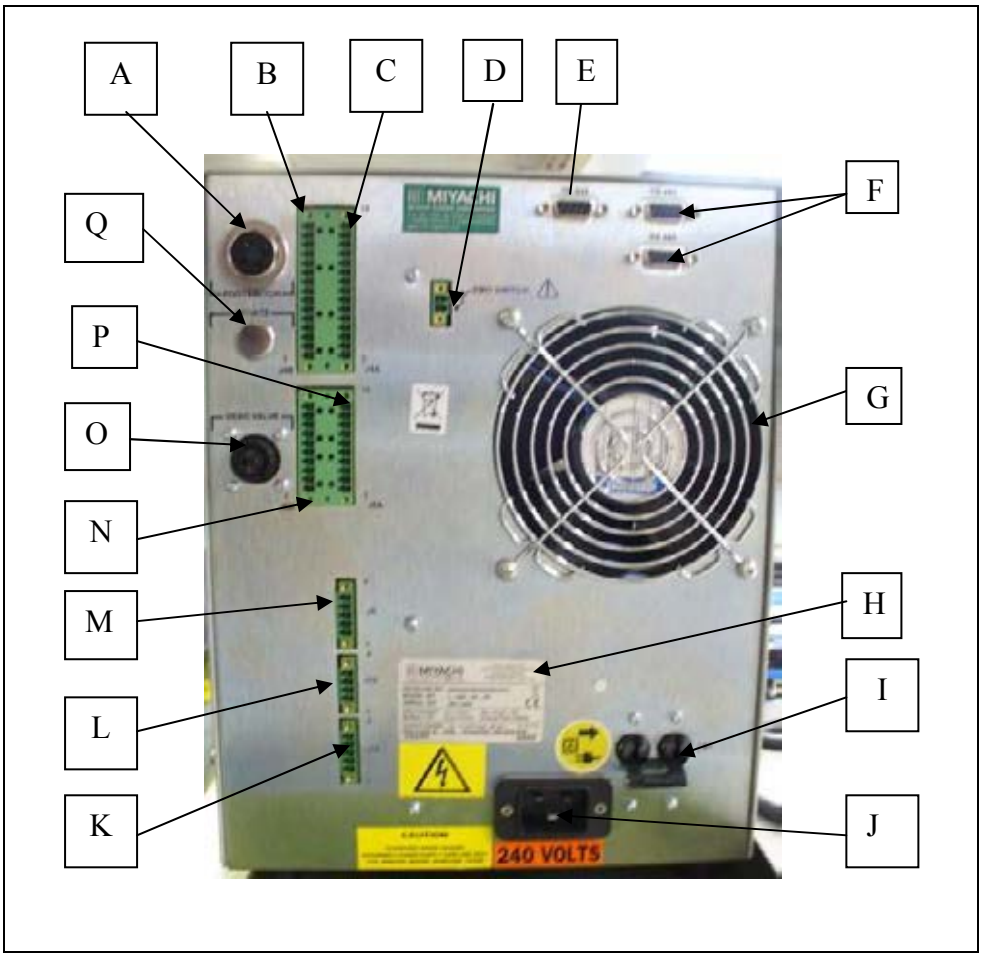
A. Earth (ground) connection
B. Power input and data cables from the Uniflow
C. Mains switch
D. Data plate and CE conformation
E. Pneumatic and electrical control cables
F. Pneumatic input connection
G. Mains input connector

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



Uniflow4 (front view)

A. LCD display
B. Profile number selection
C. Keypad
D. Heat/No heat switch
E. Transformer connections
F. Set up switch
G. Data edit areas



A. Foot firing switch (option) B. J4B firing home switch/in position sensors/start switches C. J4A control functions (miscellaneous) D. EMO switch E. RS-232 connector F. RS-485 connectors G. Fan outlet H. Serial number and CE plate	I. Main switch/circuit breaker J. Mains input connection K. J15 connector L. J10 connector M. J9 connector N. J6B Z-axis valve/cool valve O. Head valve P. J6A relays Q. Initiate

3.2 TAPE INTERPOSER MODULE (OPTION)

If this is installed, refer to the applicable manual.

3.3 ACF MODULE (OPTION)

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.

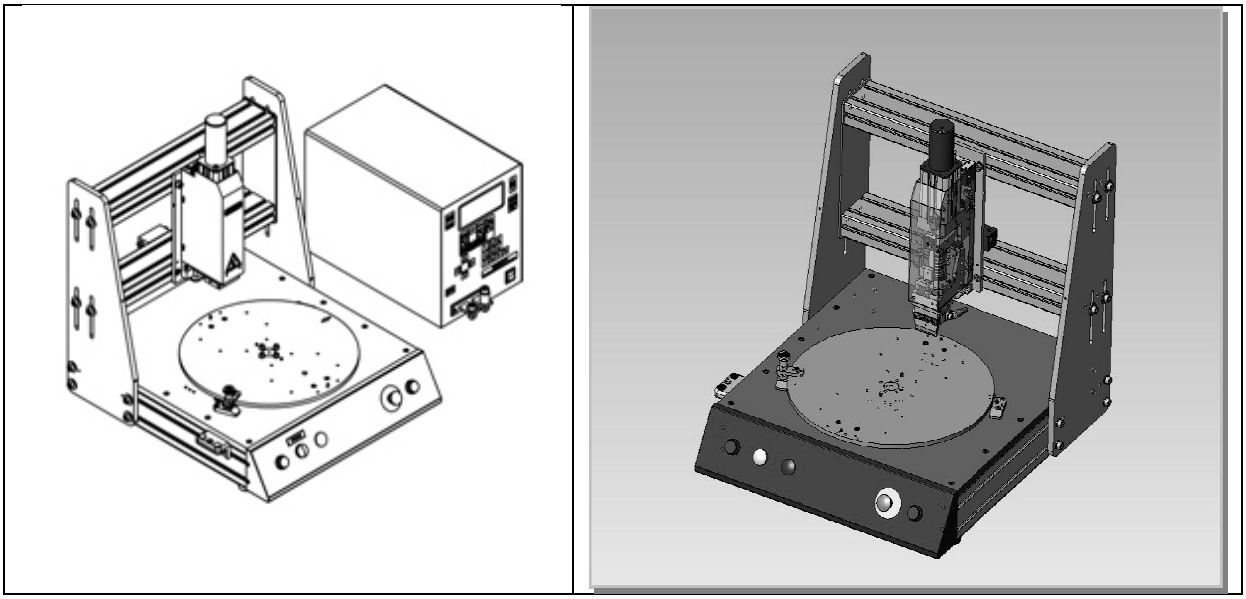
	NOTE **Push the red button to activate the emergency stop. Deactivate the emergency stop by turning it counter clockwise.**

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.

A typical CE plate.

3.6 ***DT-450 SYSTEM DESCRIPTION***



The DT-450 is a Uni-Turn ystem with a pneumatic 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

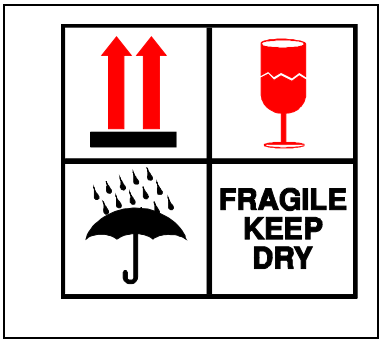
4.1 TRANSPORTATION

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.**

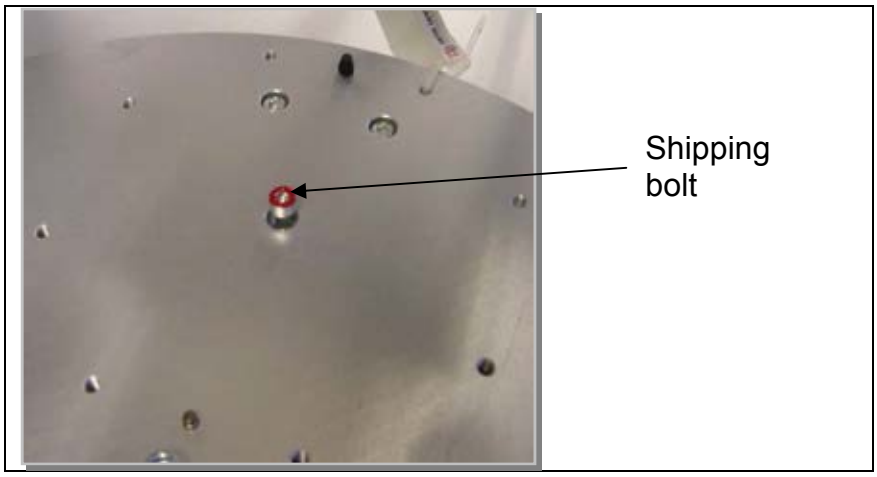
6. Remove the Uniflow cable cover, if applicable.

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 later. 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. If the system is delivered without product supports, **make sure you remove the shipping bolt**.
13. 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.**

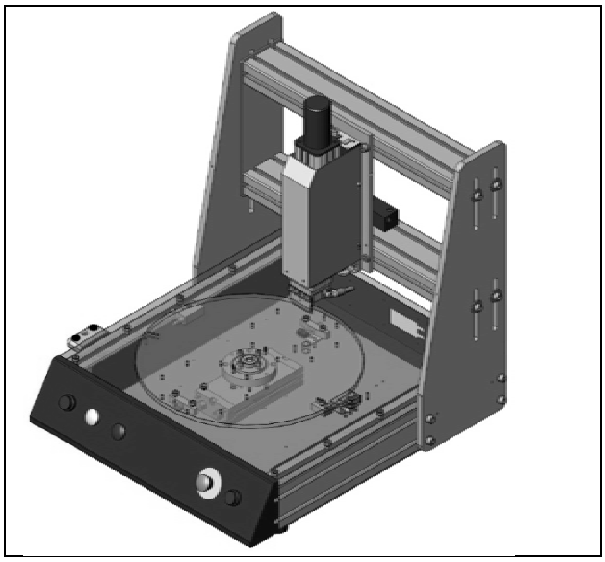
4.3 POST INSTALLATION ADJUSTMENT INSTRUCTIONS

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

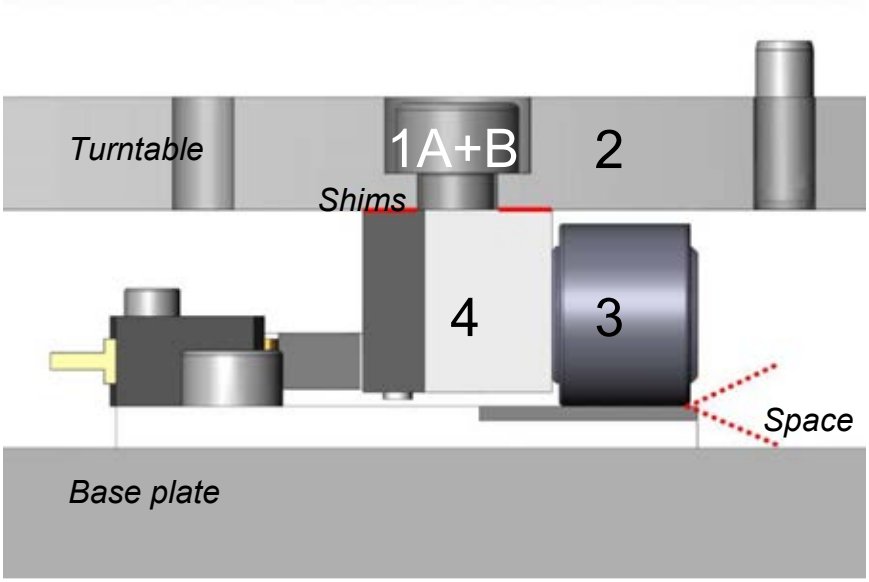
4.3.1 DT-450 systems

Do the adjustments of the Bond head in accordance with the applicable manual: (80N or 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.

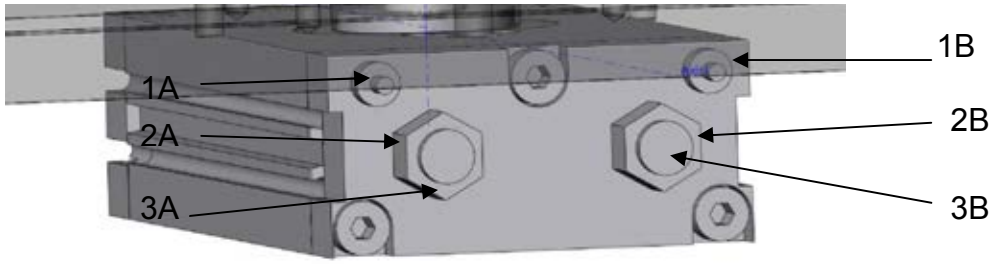


4.3.1.1 ***Turntable height adjustment***



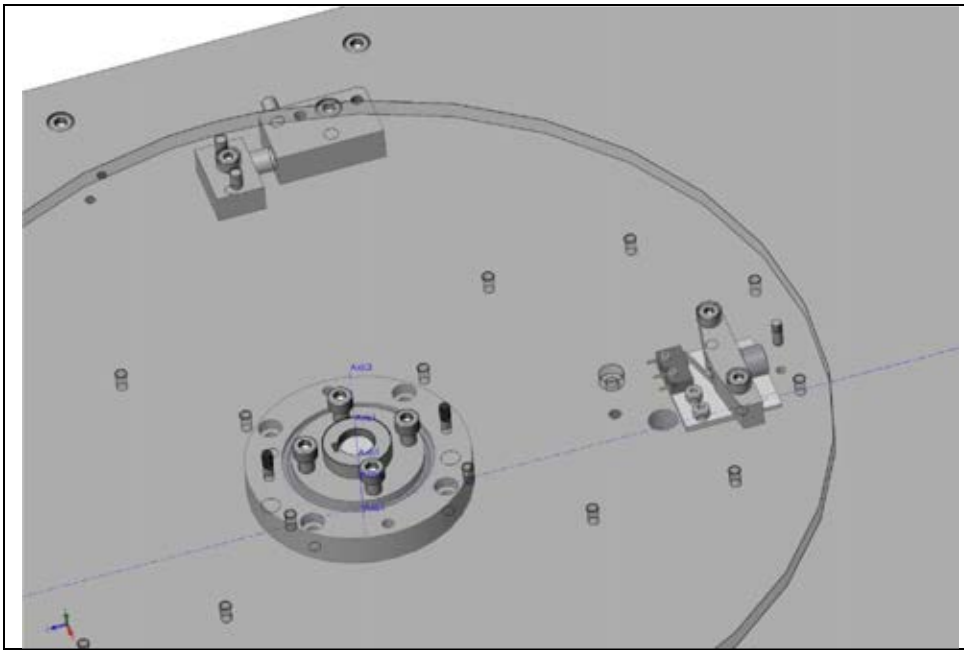
1. Turn the turntable clockwise to position 1 (operators position)
2. Use a feeler gauge to check the gap between the support surface on the base plate and the roll pin (3).
3. Turn the turntable counter-clockwise to position 2.
4. Check the gap (marked ‘Space’)’
5. If the gap > 0.01mm go to step 6. 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.

4.3.1.2 *Cylinder buffer adjustment*



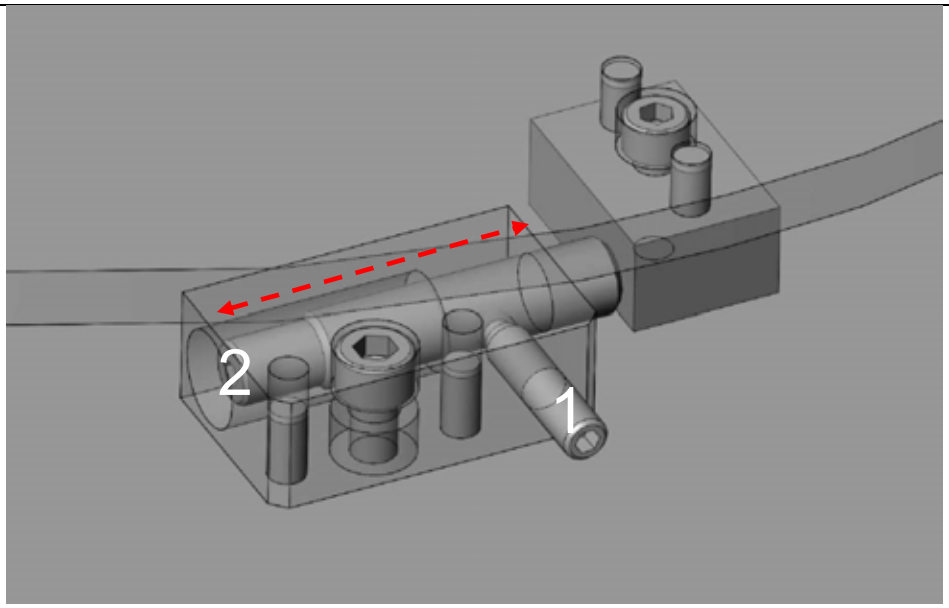
1. Turn buffers 1A and 1B out until buffers are deactivated
2. Loosen hexagon nuts 2A and 2B
3. Turn the socket headed screw 3A and 3B out until the turntable turns more than 180 degrees (clockwise and counter-clockwise)
4. Tighten hexagon nuts 2A and 2B

Turntable cylinder

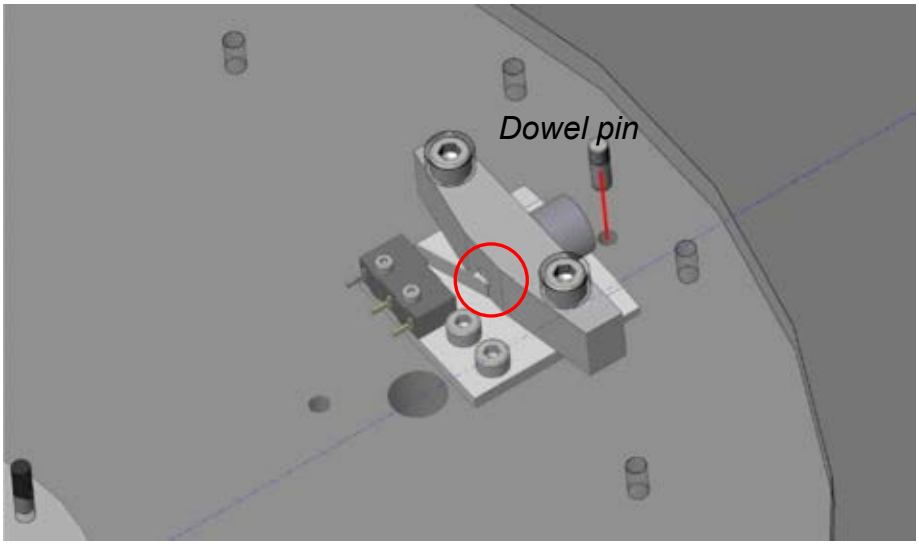


5. Turn the turntable clockwise, position 1 (see figure 19).

4.3.1.3 End position adjustment



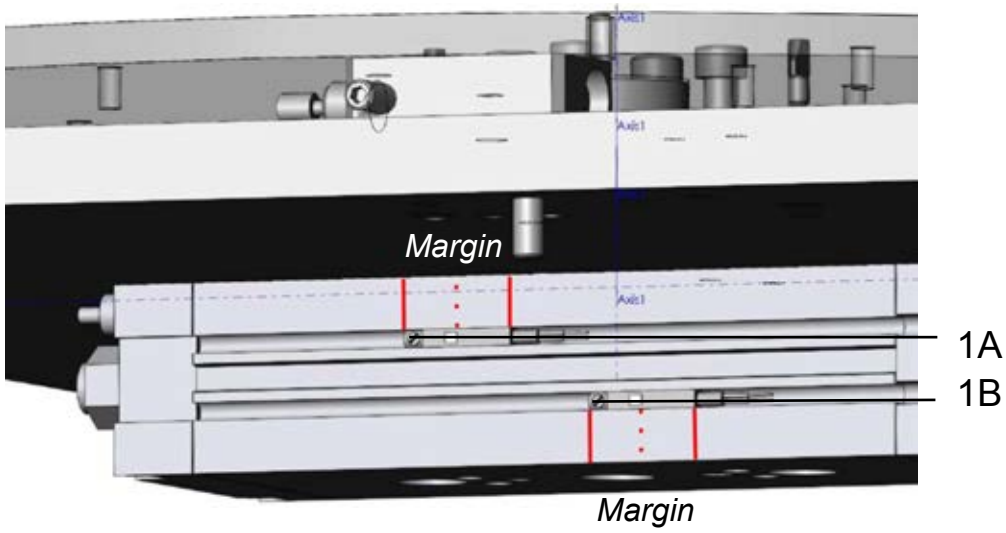
1. Loosen lock bolt 1
2. Turn in/out adjustment bolt 2 until dowel pin fits into hole (see figure 21)



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.

4.3.1.4 ***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.

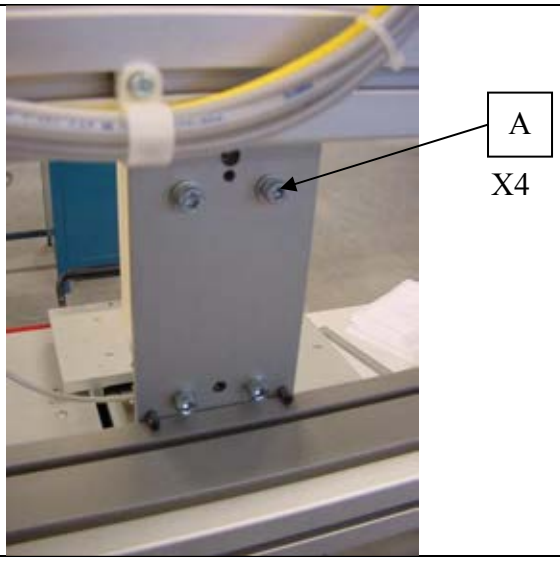
4.4 BOND HEAD PLANARITY ADJUSTMENTS

Adjustments are done in two phases:

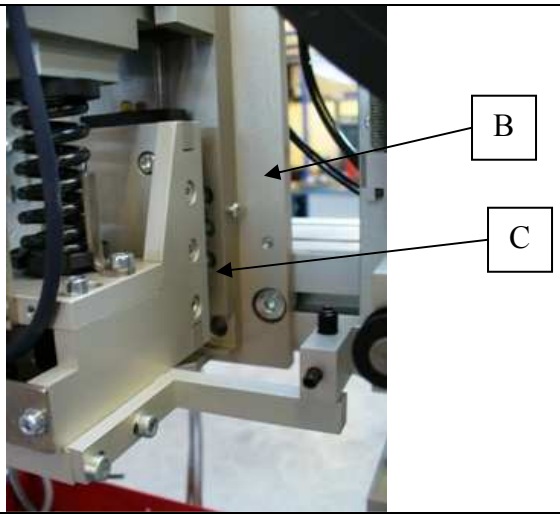
- Coarse adjustment
- Fine adjustment

4.4.1 Planarity adjustment coarse

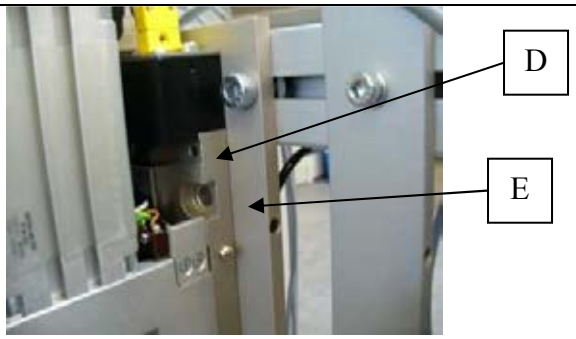
1. Make sure the force calibration has been done.
2. If there is no fixture installed, put a filler block below the thermode.
3. Manually push down the head until the thermode touches the fixture or filler block.
4. Use a 0.01mm feeler gauge to check the contact areas at the front and rear the thermode.
5. If you can insert the feeler gauge at the rear of the thermode, go to step 7.
6. If you can insert the feeler gauge at the front of the thermode, go to step 11.



7. Loosen the four screws (A).



8. Insert a 0.01mm shim between the head (C) and the baseplate (B) at the bottom of the head). Make sure you insert it as near to the screws as possible.
9. Align and hold the head in position and tighten the four screws.
10. Do steps 3 and 4 until you cannot insert a 0.01mm feeler gauge between the thermode and the fixture or filler block.

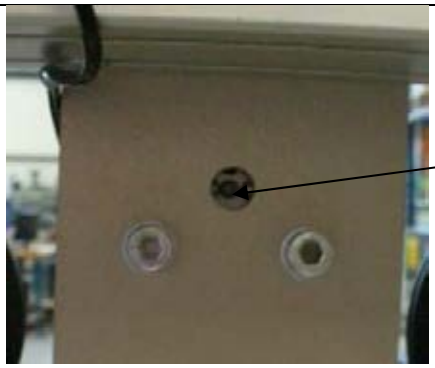


11. Loosen the four screws (A).
12. Insert a 0.01mm shim between the head (D) and the baseplate (E) at the top of the head). Make sure you insert it as near to the screws as possible
13. Align and hold the head in position and tighten the four screws.
14. Do steps 3 and 4 until you cannot insert a 0.01mm feeler gauge between the thermode and the fixture or filler block.

15. Do steps 3 and 4 until you cannot insert a 0.01mm feeler gauge between the thermode and the fixture or filler block.
16. Make sure the four screws (A) are fully tightened.
17. Go to step 18 to do the left to right fine adjustment.

Note: There is no front to back fine adjustment.

18. Get access to the lateral adjustment holes (F) (one on each side of the head).
19. Use an Allen key to fully turn in the adjustment screws until they are finger tight.



20. Examine the two contacts and the contact pin in the hole (G). They should both touch equally.
21. Put a piece of pressure sensitive paper (art. Nr: 67W0003 or art. Nr: 67W0023) on the target area of the thermode.
22. Use the air supply to move the head down until it presses on the paper.
23. Lift the thermode and examine the pressure paper

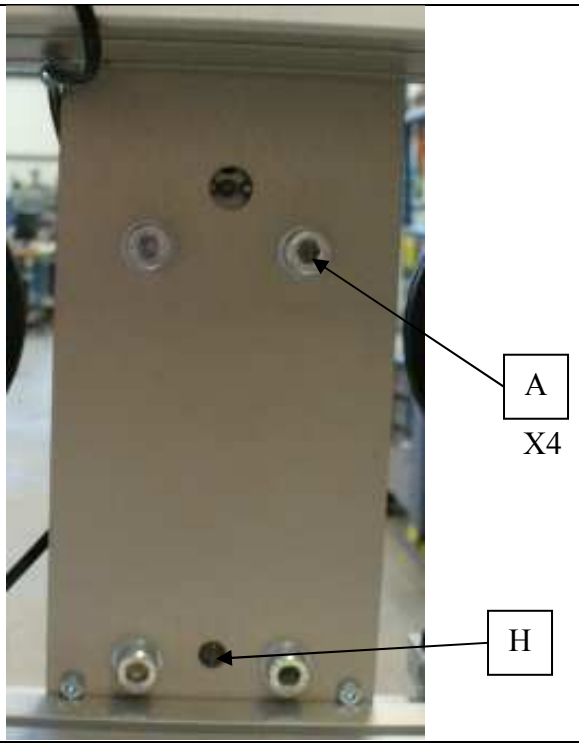
When planarity is checked by an impression on pressure paper the result has to be evaluated.
The coloring of the paper, indicates the action to be taken.

When the right side of the impression is darker red (A), this side of the thermode has to go up or the left side down.

When the left side of the impression is darker red (B), this side of the thermode has to go up or the right side down.
When the contact area is homogeneous red (C), adjustment is completed.

Note: Full homogeneity at C is not necessary if the left and right ends of the pressure paper are identical. If they are, errors in the center of the strip at C can be ignored.

Which side to adjust depends on the current position of the moving part being adjusted. When the left thermode side has to go up and the left adjustment does not allow any upward correction, the right side has to be adjusted down.



24. Loosen the four attachment screws. Make sure you do not loosen them too much or the shims that may have been installed earlier may fall out.

Note: The complete head can now rotate around the pin (H).

25. Adjust the applicable set screw a short distance.
26. Tighten the four attachment screws.
27. Do steps 21 thru 26 until the image is homogenous.
28. Make another impression and retain it by the system.

4.4.2 Left to right fine planarity adjustment

This done by moving the thermode connection block.

The target area is normally a stainless steel block positioned under the product target area. If this surface is not flat, (e.g. with cut outs) the product can be placed.

Always make sure that the surfaces of the thermode and target areas are completely clean and undamaged.

When the system has a tape or interlayer module, do not align with the tape or interlayer present. The module can be mounted but the tape must not be present under the thermode.

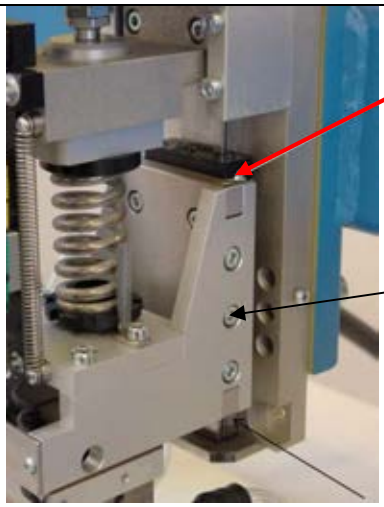
1. Make sure the thermode and target aread are clean.
2. Put a piece of pressure sensitive paper (art. Nr: 67W0003 or art. Nr: 67W0023) on the target area of the thermode.
3. Move the head by hand down until it presses on the paper.
4. Lift the thermode and examine the pressure paper.

When planarity is checked by an impression on pressure paper the result has to be evaluated.
The coloring of the paper, indicates the action to be taken.

When the right side of the impression is darker red (A)., this side of the thermode has to go up or the left side down.
When the left side of the impression is darker red (B), this side of the thermode has to go up or the right side down.
When the contact area is homogeneous red (C), adjustment is completed.

Note: Full homogeneity at C is not necessary if the left and right ends of the pressure paper are identical. If they are, errors in the center of the strip at C can be ignored.

Which side to adjust depends on the current position of the moving part being adjusted. When the left thermode side has to go up and the left adjustment does not allow any upward correction, the right side has to be adjusted down.



5. If the pressure paper shows an incorrect impression, get access to the applicable adjustment screw (A).
6. Loosen the three screws (B) on the applicable side.
7. Turn the applicable adjuster (A), making sure the adjustment screws stay in full contact with the thermode connector.
8. Tighten the three screws (B).
9. Do steps 2 thru 8 again until a homogenous image is shown.

When the image is correct, make another impression and retain it by the system.

5 THE CONTROL PANELS

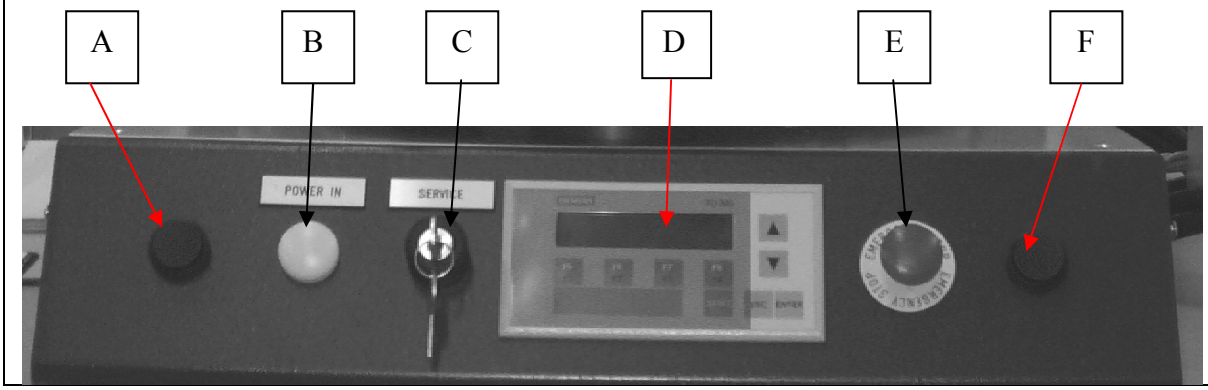
	**CAUTION** **The desktop system may only be operated if all components are completely and correctly installed.**

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

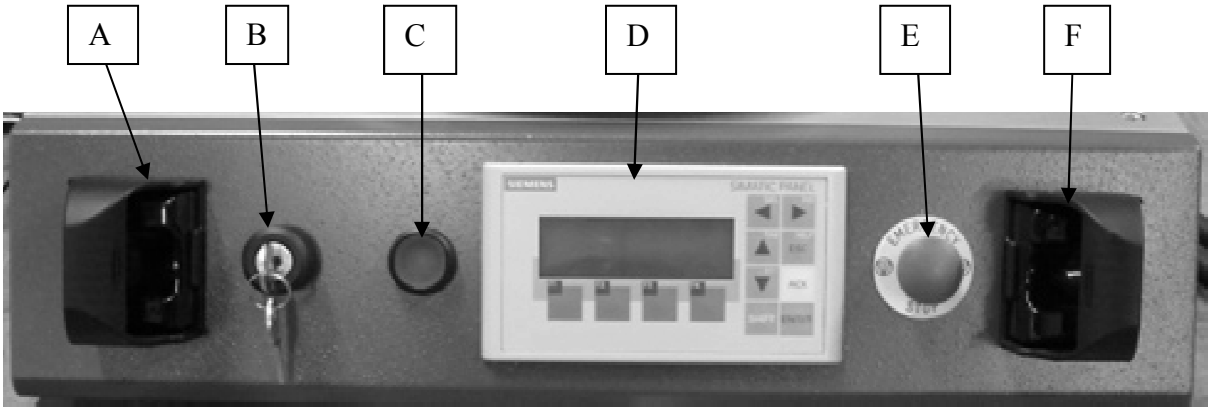
In this system, both the Uniflow control panel and the OP73 control panel control the heat.

5.1.1 Standard two hand control



A. Left button two-hand control
B. Power In indicator
C. Service key switch
D. OP73 screen/display (also called Human Machine Interface (HMI))
E. Emergency switch
F. Right button two-hand control

5.1.2 Alternative two hand control



A. Left button two-hand sensor
B. Service key switch
C. Control In indicator
D. OP73 screen/display (also called Human Machine Interface (HMI))
E. Emergency switch
F. Right button two-hand sensor

5.2 CONSTANT HEAT CONTROL PANEL (OPTION)

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.

5.3 UNIFLOW CONTROL PANEL

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

Uniflow 4 front panel

Refer to the applicable Uniflow operating manual to set the parameters.

5.4 *SIMAC OP73 CONTROL PANEL*

	NOTE **Refer to the related user manual for more detailed information about this control panel.**

Keys	Description
[F1…F4]	Function keys. These keys correspond with the displayed text (functions or movements). The function of the keys depends on the displayed function.
[◄] [►]	These keys can be used to edit double digit numbers.
[▲] [▼]	By means of these keys you can switch, within a menu, to the following or the previous display. They can also be used when editing ‘double digit’ numbers.
[ESC]	No function

ACK	Acknowledge error.
[SHIFT]	No function
[ENTER]	Enter key to store the entered values into the RAM memory.

For further details refer to the applicable manual .

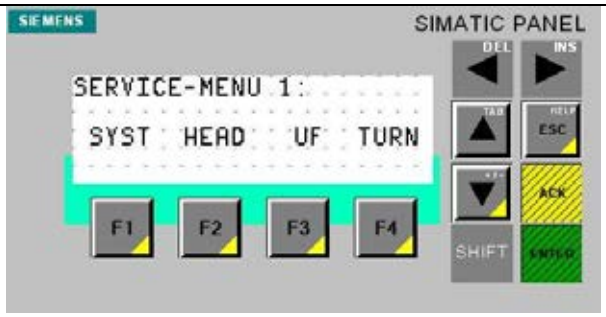
6 SERVICE SCREENS DT-450

6.1 MAIN SERVICE SCREEN

	**NOTE** In the illustrations that follow, a small yellow triangle appears in the right corner of the **F** keys. This is not an LED light, only a guide to to the programmer.

CHANGE THESE FOR EACH CUSTomer

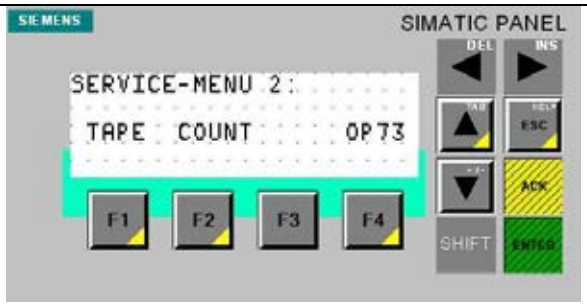
6.1.1 Service Main 1



In **service-menu 1:**

Press **[F1]** to enter the **'system'** service menu.
Press **[F2]** to enter the **'head'** service menu.
Press **[F3]** to enter the **'Uniflow'** service menu.
Press **[F4]** to enter the **'turntable'** service menu.
Press **[▼]** to go to the next screen.

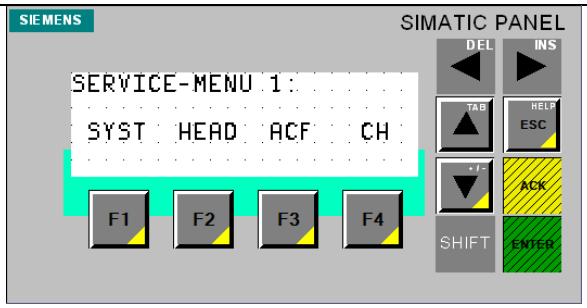
6.1.2 Service Main 2



In **service-menu 2:**

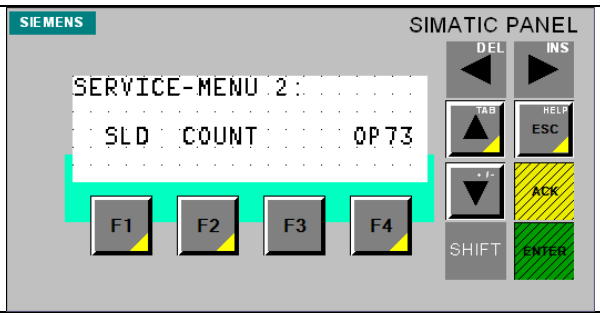
Press **[F1]** to enter the **'tape'** service menu.
Press **[F2]** to enter the **'counter'** service menu.
Press **[F4]** to enter the **'OP73'** service menu.
Press **[▼]** to go to the next screen.

6.1.3 Service Main 3



Press **[F1]** to enter the **'system'** service menu.
Press **[F2]** to enter the **'head'** service menu.
Press **[F3]** to enter the **'ACF'** service menu. **(OPTION)**
Press **[F4]** to enter the **'constant heat'** service menu. **(OPTION)**
Press **[▼]** to go to the next screen

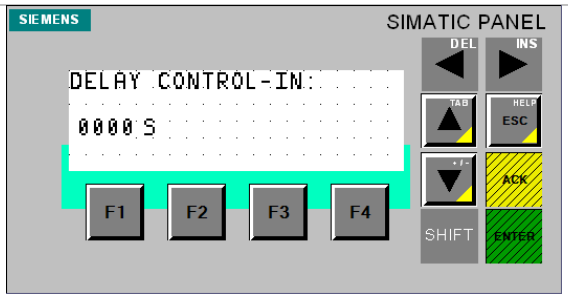
6.1.4 Service Main 4



Press **[F1]** to enter the **'slide'** service menu. **(OPTION)**
Press **[F2]** to enter the **'counter'** service menu.
Press **[F4]** to enter the **'OP73'** service menu.

6.2 SYSTEM PARAMETERS EDIT SCREENS

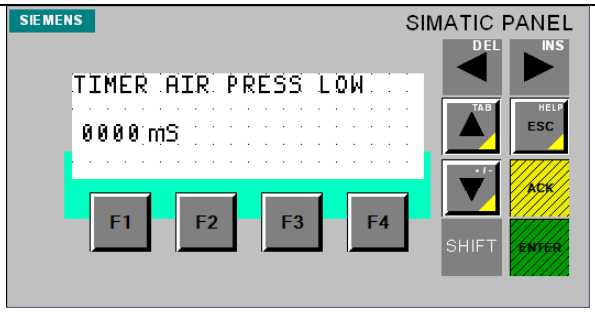
6.2.1 System parameters screen 1



Press **[▼]** to go to the time edit line and press **Enter**.
Use the **[▼]** and **[▲]** keys to enter the delay time (in seconds) that is necessary after activating the 'control-in', to ensure that the air pressure is correct and all devices have started up correctly and press **ENTER** to confirm this value.

Press **[▼]** to go to the next screen.

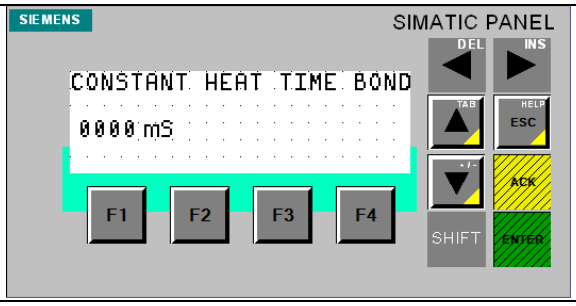
6.2.2 System parameters screen 2 (option)



Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the delay time (in seconds) that is necessary after activating the 'control-in', to ensure that the air pressure is correct and all devices have started up correctly and press **[ENTER]** to confirm this value.

Press **[▼]** to go to the next screen.

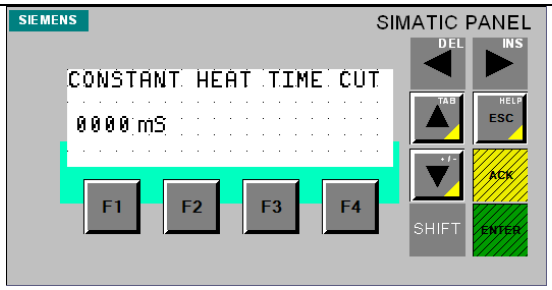
6.2.3 System paramters screen 3 (option)



Press **[▼]** to go to the time edit line and press **Enter**.
Use the **[▼]** and **[▲]** keys to enter the applicable bonding time (in mseconds)
Press **[ENTER]** to confirm this value.

Press **[▼]** to go to the next screen.

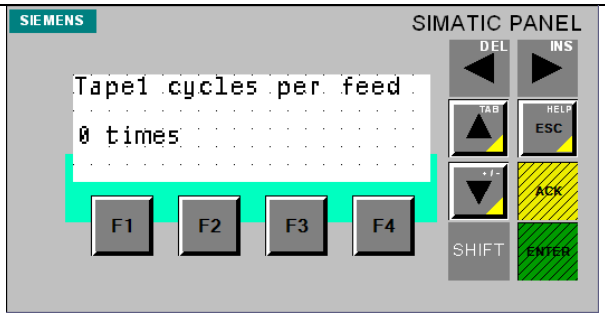
6.2.4 System parameters screen 4 (option)



Press **[▼]** to go to the time edit line and press **Enter**.
Use the **[▼]** and **[▲]** keys to enter the time necessary to cut the tape from the bottles (in mseconds).
Press **[ENTER]** to confirm this value.

Press **[▼]** to go to the next screen.

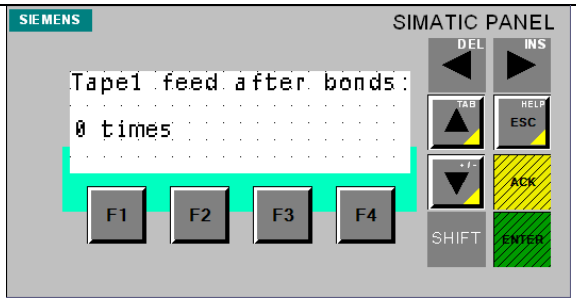
6.2.5 System parameters screen 5 (option)



Press **[▼]** to go to the edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the number of tape cycles per feed. This is dependent on how much tape is transported on each cycle.
Press **[ENTER]** to confirm this value.

Press **[▼]** to go to the next screen.

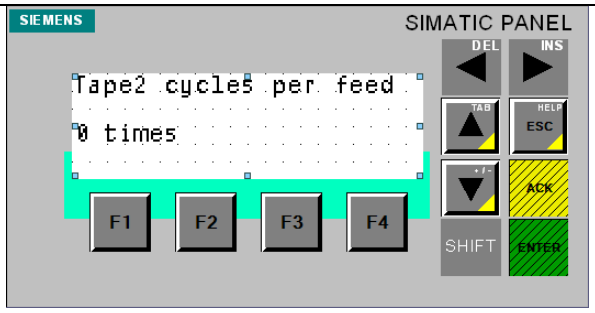
6.2.6 System parameters screen 6 (option)



Press **[▼]** to go to the edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the number of bonding actions allowed before the tape cycles.
Press **[ENTER]** to confirm this value.

Press **[▼]** to go to the next screen.

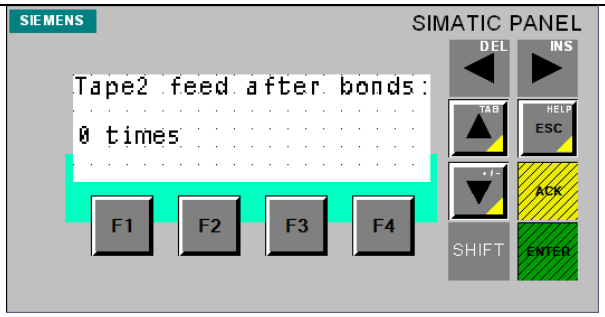
6.2.7 System parameters screen 7 (option)



Press **[▼]** to go to the edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the number of tape cycles per feed. This is dependent on how much tape is transported on each cycle.
Press **[ENTER]** to confirm this value.

Press **[▼]** to go to the next screen.

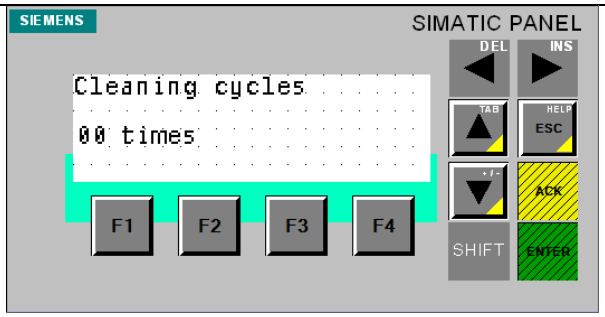
6.2.8 System parameters screen 8 (option)



Press **[▼]** to go to the edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the number of bonding actions allowed before the tape cycles.
Press **[ENTER]** to confirm this value.

Press **[▼]** to go to the next screen.

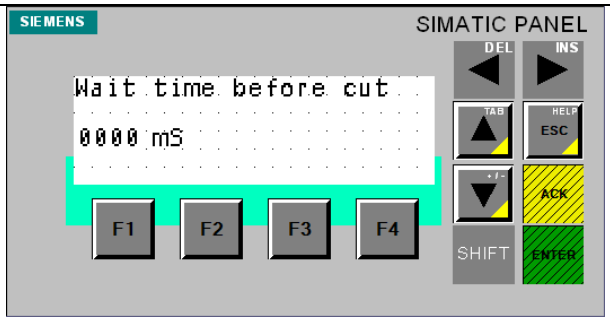
6.2.9 System parameters screen 9 (option)



Press **[▼]** to go to the edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the number of cleaning cycles after the tape is cut..
Press **[ENTER]** to confirm this value.

Press **[▼]** to go to the next screen.

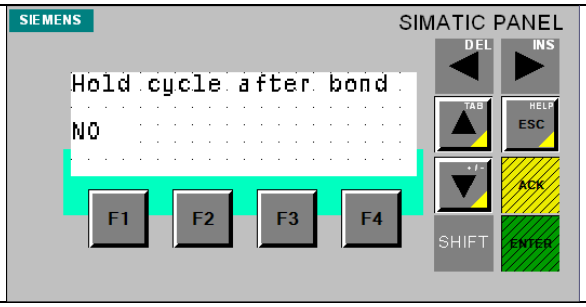
6.2.10 System parameters screen 10 (option)



Press **[▼]** to go to the edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time between the completion of bonding and the operation of the cutter.
Press **[ENTER]** to confirm this value.

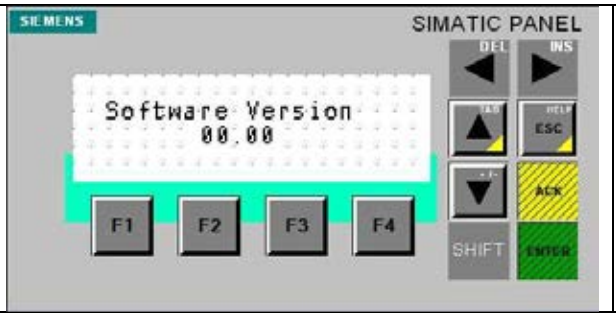
Press **[▼]** to go to the next screen.

6.2.11 System parameters screen 11 (option)



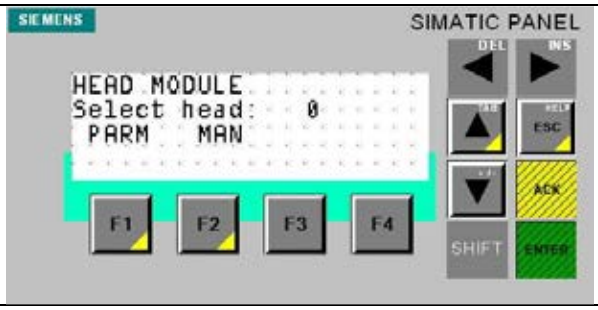
Press **[▼]** (toggle) to **YES** to hold the process after bonding. Press **[▼]** (toggle) to **'NO'** to undo the hold function.
Press **[▼]** to go to the next screen.

6.2.12 Systems parameters screen 12

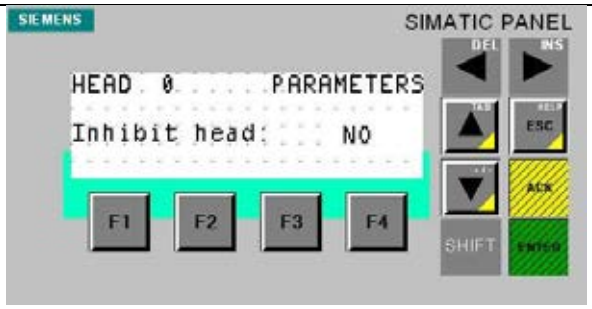
	No action is required. The screen only displays the current version of software installed.

6.3 HEAD SERVICE SCREENS

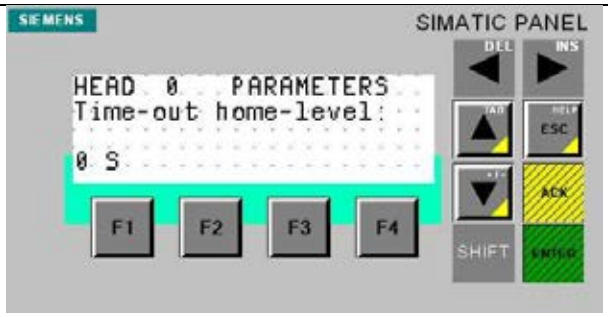
6.3.1 Head main screen

	If there is only one weld head, the head number will default to 1. Press **[F1]** to go to the parameter-menu of the head. Press **[F2]** to go to the manual-menu of the head.

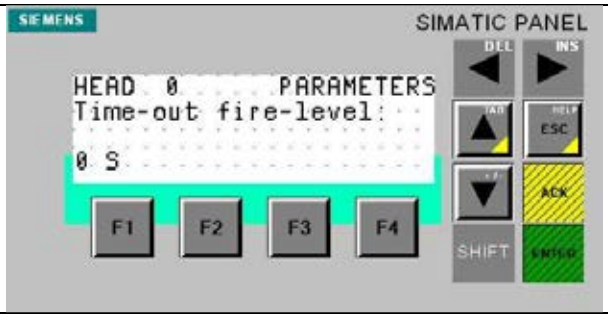
6.3.2 Head parameter screen 1

	Press **[F1]** in the head module main menu. Press **[▼]** (toggle) to **YES** to inhibit the movement of the selected head. The head will stay in its home-position. All head related errors are discarded. Press **[▼]** (toggle) to **'NO'** to undo the inhibition of the selected head. Press **[▼]** to go to the next screen.

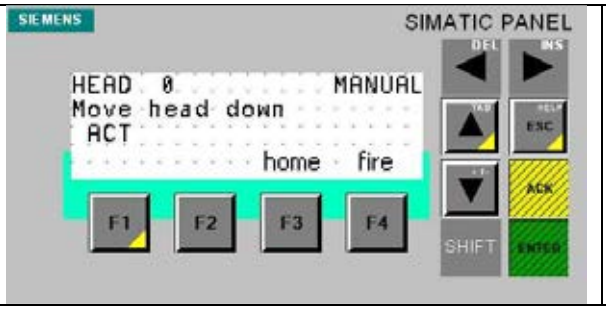
6.3.3 Head parameter screen 2

	Press **[F1]** in the head module main menu. Press **[▼]** (toggle) to **YES** to inhibit the movement of the selected head. The head will stay in its home-position. All head related errors are discarded. Press **[▼]** (toggle) to **'NO'** to undo the inhibition of the selected head. Press **[▼]** to go to the next screen.

6.3.4 Head parameter screen 3

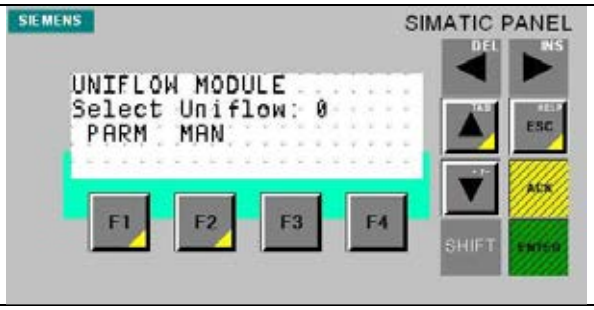
	Press **[▼]** to go to the time edit line and press **ENTER**. Use the **[▼]** and **[▲]** keys to enter the time (in seconds) that is necessary within which the head has to complete its movement to the fire-level and press **[ENTER]** to confirm this value.

6.3.5 Head manual screen

	Press **[F2]** in the head module main menu .Press **[F1]** to move the selected head down or up (toggle function). The text on the bottom line of the screen shows the sensor status.

6.4 UNIFLOW SERVICE SCREENS (OPTION)

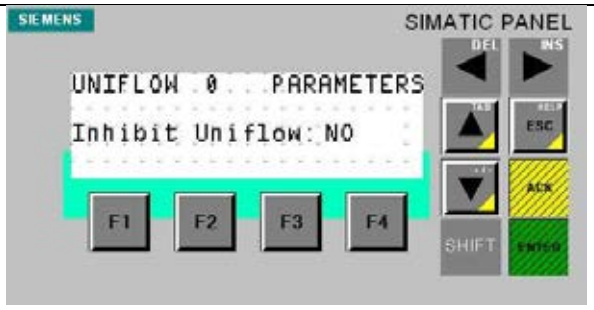
6.4.1 Uniflow main screen



There is only one slide module, thus the Uniflow number will default to 1.

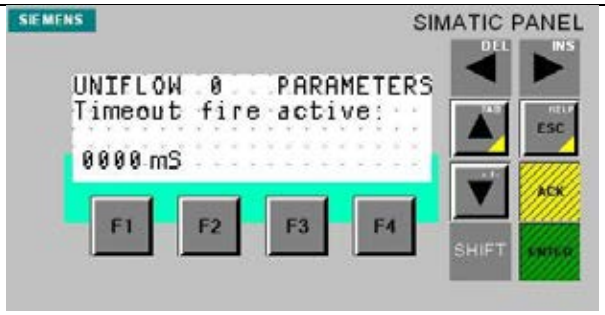
Press **[F1]** to go to the parameter menu of the Uniflow module.
Press **[F2]** to go to the manual menu of the Uniflow module.

6.4.2 Uniflow parameter screen 1



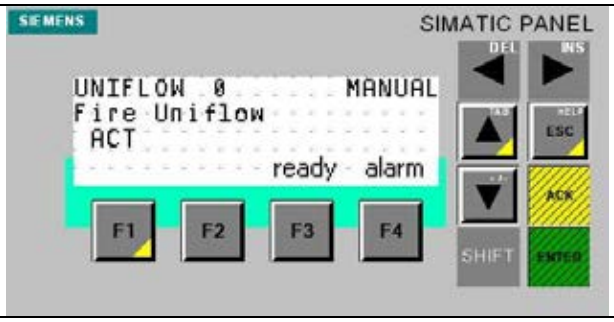
Press the **[▼]** or **[▲]** keys to enter **'YES'** to inhibit the Uniflow so it will not be activated.
Enter **'NO'** to undo the inhibition of the slide. When the selection is completed, press **enter**
Press **[▼]** to go to the next screen.

6.4.3 Uniflow parameter 2



If the bond is not completed within the time set, the process stops.
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to input the time and press **ENTER**.
Note that this value must be longer than the 'normal' process time for the Uniflow.

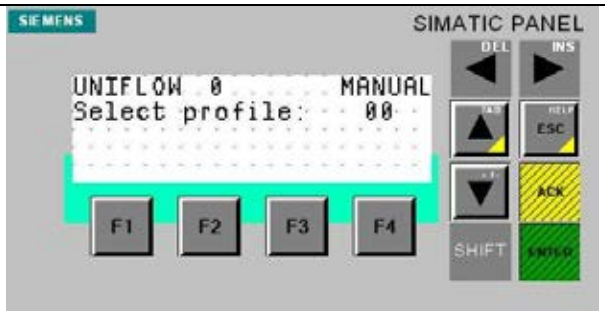
6.4.4 Uniflow manual screen 1



By pressing **[F1]** the Uniflow will heat up the bond head, independent of the up or down position of the head.

The text on the bottom line of the screen shows the system status.
Press **[▼]** to go to the next screen.

6.4.5 Uniflow manual screen 2

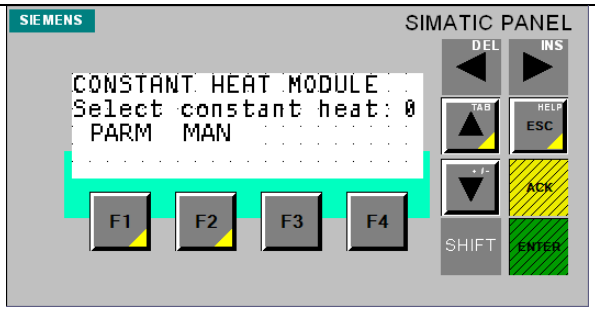


Use the **[▲]** and **[▼]** keys to

Select the required profile number of the Uniflow (for further details, refer to the manual for the Uniflow) and press **[ENTER]** to confirm this value.
Note that numbers above 9 must be edited also by the **[◄] [►]** keys.

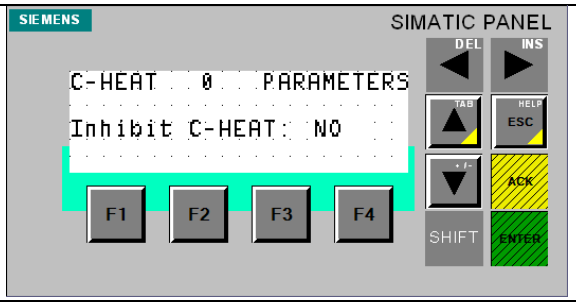
6.5 CONSTANT HEAT SERVICE SCREENS (OPTION)

6.5.1 Constant heat main screen



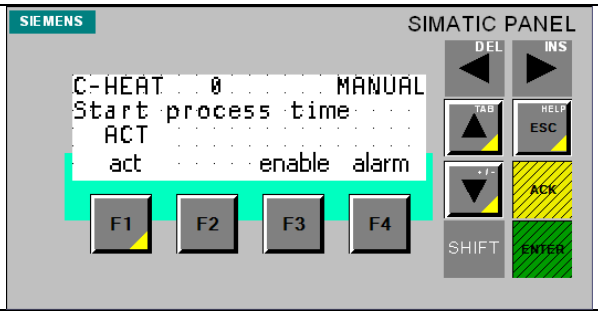
If there are two constant heat modules, Press **ENTER** and use the the **[▼]** or **[▲]** keys to enter the applicable number for each thermode. After selection, press **ENTER**.
Press **[F1]** to go to the parameter menu of the constant heat module.
Press **[F2]** to go to the manual menu of the constant heat module.

6.5.2 Constant heat parameters screen 1



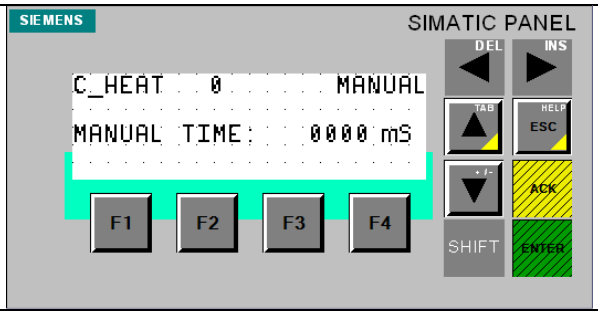
Press **ENTER** and use the **[▼]** or **[▲]** keys to enter **'YES'** to inhibit the applicable constant heat.
Enter **'NO'** to undo the inhibition of the constant heat. When the selection is completed, press **ENTER**
Press **[▼]** to go to the nex

6.5.3 Constant heat manual screen 1



Press **[F2]** in the constant heat module main menu .Press **[F1]** to start the constant heat (toggle function).
The text at the bottom of the screen shows the status of the module.

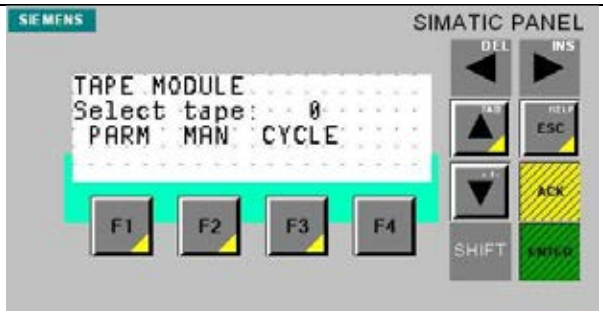
6.5.4 Constant heat manual screen 2



Press **ENTER** and use the **[▼]** or **[▲]** keys to enter the simulated cycle time of the constant heat module.
Press **ENTER** to confirm the value.

6.6 TAPE SERVICE SCREENS (OPTION)

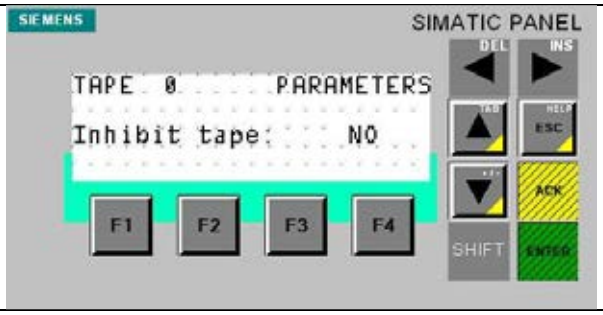
6.6.1 Tape main screen



There is only one tape module, thus the number will default to 1.

Press **[F1]** to go to the parameter menu of the tape module.
Press **[F2]** to go to the manual menu of the tape module.
Press **[F3]** to cycle the tape through one cycle of operation.

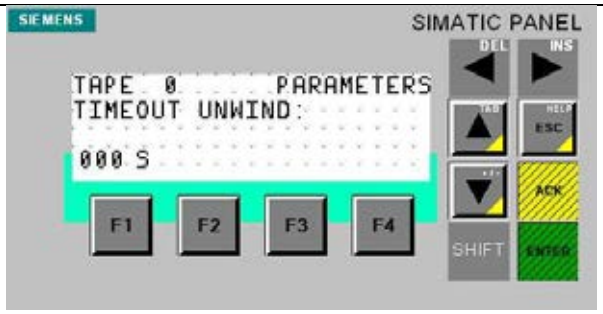
6.6.2 Tape parameters screen 1



Press **[▼]** (toggle) to **YES** to inhibit the movement of the tape. Press **[▼].** Toggle) to **'NO'** to undo the inhibition of the tape movement.

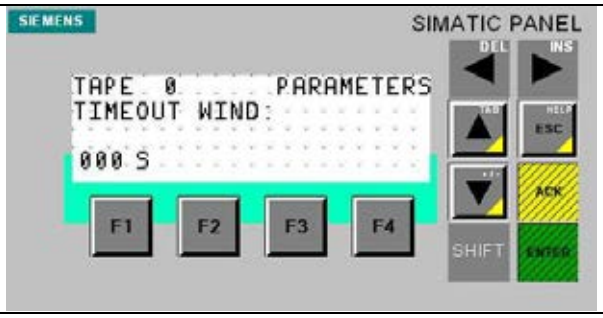
Press **[▼]** to go to the next screen.

6.6.3 Tape parameters screen 2



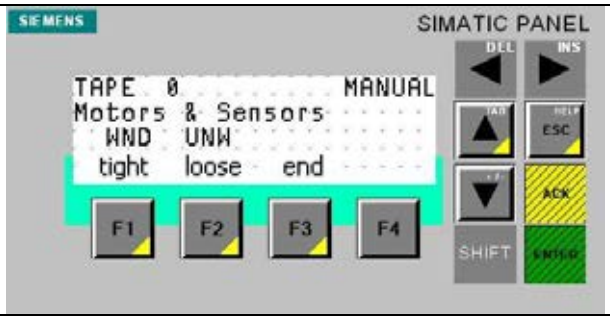
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time (in seconds) that is necessary within which the tape has to complete its unwinding action.
Press **[ENTER]** to confirm this value.
Press **[▼]** to go to the next screen.

6.6.4 Tape parameters screen 3



Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]**and **[▲]** keys to enter the time (in seconds) that is necessary within which the tape has to complete its winding action.
Press **[ENTER]** to confirm this value.

6.6.5 Tape manual screen

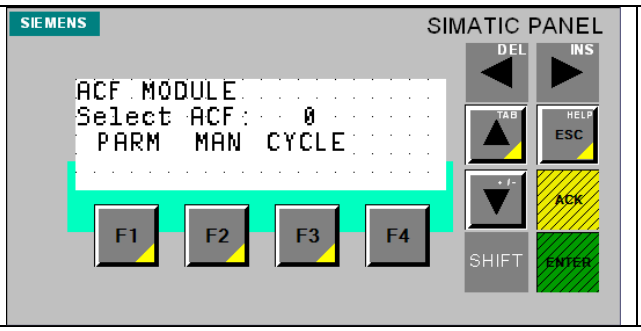


Press **[F1]** to select the winding action.

The text on the bottom line of the screen shows the sensor status.

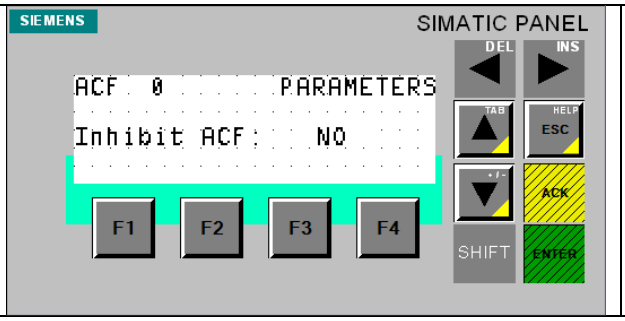
6.7 ACF EDIT SCREENS (OPTION)

6.7.1 ACF module main screen



Press **[F1]** to go to the parameter menu of the tape module.
Press **[F2]** to go to the manual menu of the tape module.
Press **[F3]** to cycle the tape through one cycle of operation.

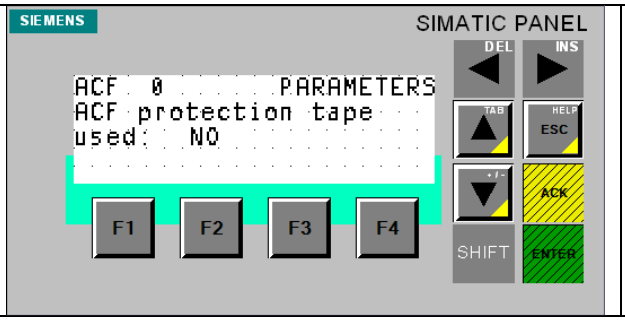
6.7.2 ACF parameter screen 1



Press **[▼]** (toggle) to **YES** to inhibit the movement of the tape. Press **[▼].** Toggle) to **'NO'** to undo the inhibition of the tape movement.

Press **[▼]** to go to the next screen.

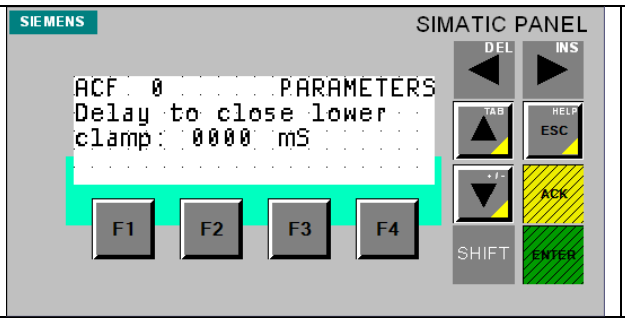
6.7.3 ACF parameter screen 2



Press **[▼]** (toggle) to **YES** to inhibit the use of the protection tape. Press **[▼].** Toggle) to **'NO'** to undo the inhibition of the protection tape.

Press **[▼]** to go to the next screen.

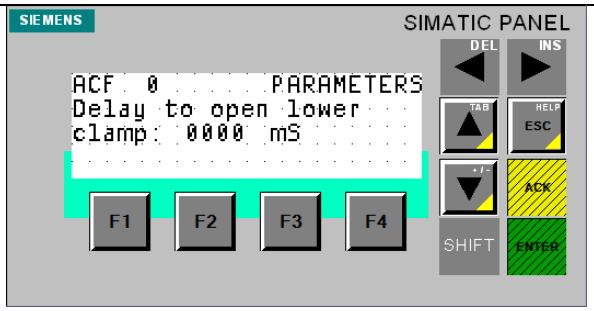
6.7.4 ACF parameter screen 3



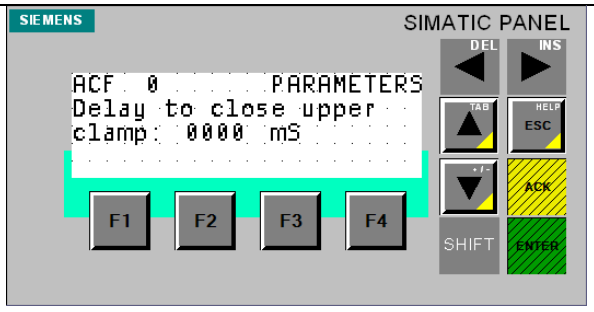
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time (in mseconds) that is necessary to delay the operation to close the lower clamp.
Press **[ENTER]** to confirm this value.

	Press **[▼]** to go to the next screen.

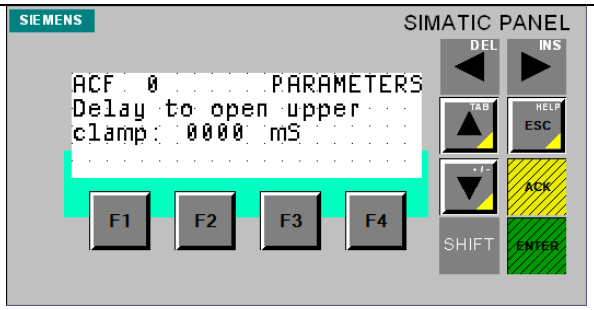
6.7.5 ACF parameter screen 4

	Press **[▼]** to go to the time edit line and press **ENTER**. Use the **[▼]** and **[▲]** keys to enter the time (in mseconds) that is necessary to delay the operation to open the lower clamp. Press **[ENTER]** to confirm this value. Press **[▼]** to go to the next screen.

6.7.6 ACF parameter screen 5

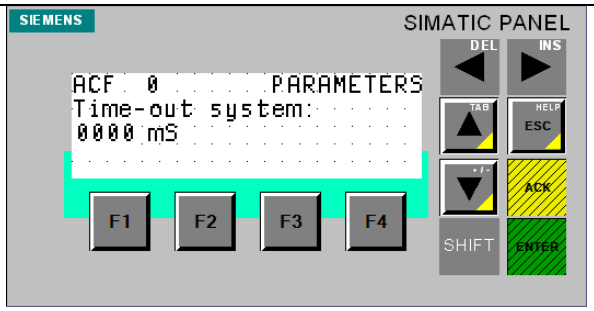
	Press **[▼]** to go to the time edit line and press **ENTER**. Use the **[▼]** and **[▲]** keys to enter the time (in mseconds) that is necessary to delay the operation to close the upper clamp. Press **[ENTER]** to confirm this value. Press **[▼]** to go to the next screen.

6.7.7 ACF parameter screen 6



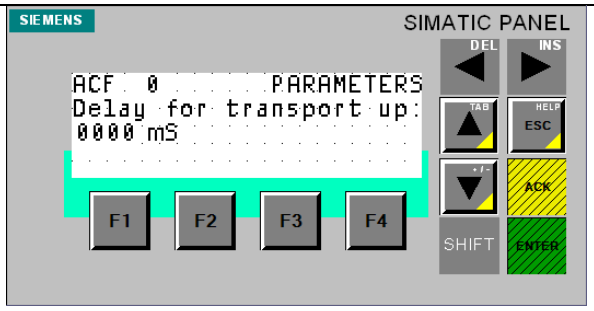
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time (in mseconds) that is necessary to delay the operation to open the upper clamp.
Press **[ENTER]** to confirm this value.
Press **[▼]** to go to the next screen.

6.7.8 ACF parameter screen 7



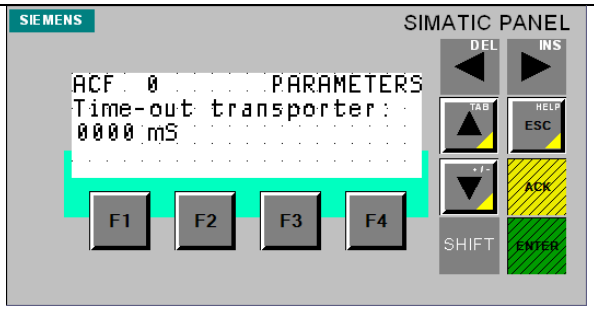
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time (in mseconds) that is necessary within which the ACF module is fully down or up
Press **[ENTER]** to confirm this value.

6.7.9 ACF parameter screen 8



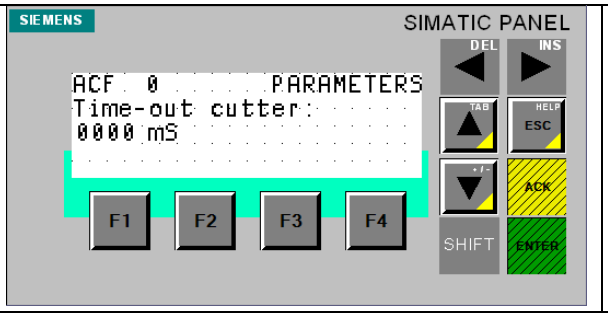
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time (in mseconds) that is necessary to delay the operation of the transport cylinder.
Press **[ENTER]** to confirm this value.

6.7.10 ACF parameter screen 9



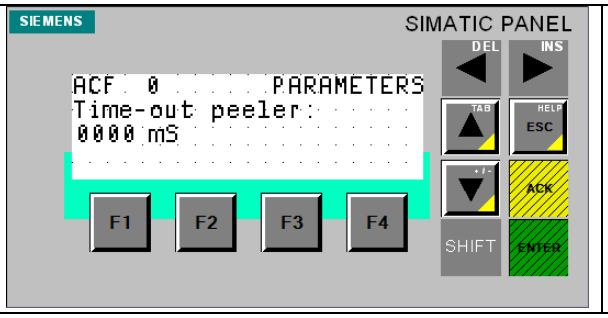
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]**and **[▲]** keys to enter the time (in mseconds) that is necessary within which the transport cylinder has to complete its action.
Press **[ENTER]** to confirm this value.

6.7.11 ACF parameter screen 10



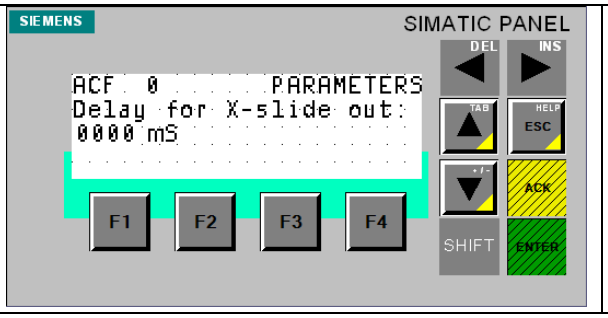
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]**and **[▲]** keys to enter the time (in mseconds) that is necessary within which the cutter cylinder has to complete its action.
Press **[ENTER]** to confirm this value.

6.7.12 ACF parameter screen 11



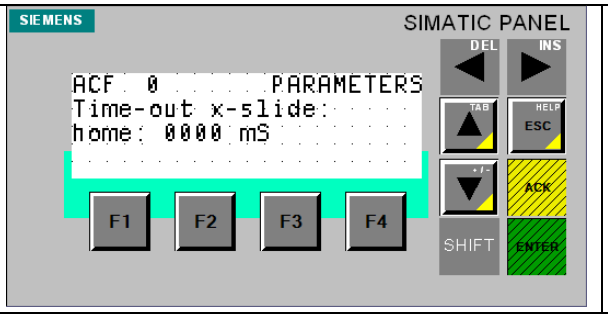
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]**and **[▲]** keys to enter the time (in mseconds) that is necessary within which the peeler cylinder has to complete its action.
Press **[ENTER]** to confirm this value.

6.7.13 ACF parameter screen 12 (option)



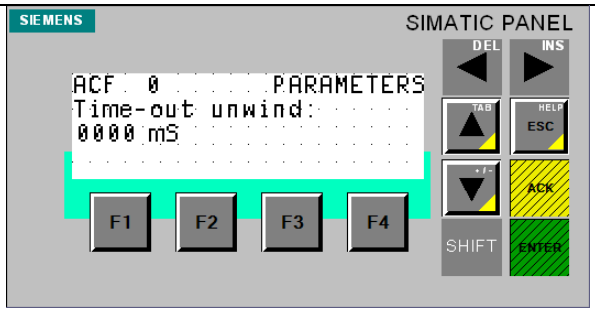
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time (in mseconds) that is necessary to delay the operation of the X-slide cylinder cylinder.
Press **[ENTER]** to confirm this value

6.7.14 ACF parameter screen 13 (option)



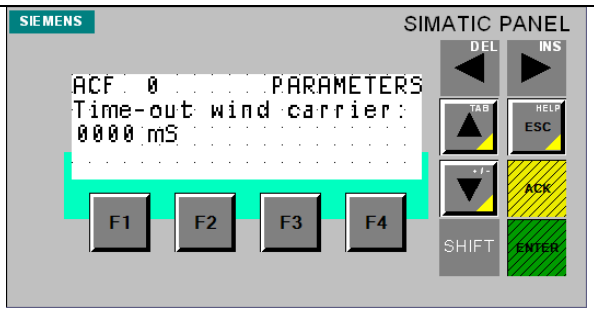
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]**and **[▲]** keys to enter the time (in mseconds) that is necessary within which the X-slide cylinder has to complete its action.
Press **[ENTER]** to confirm this value.

6.7.15 ACF parameter screen 14



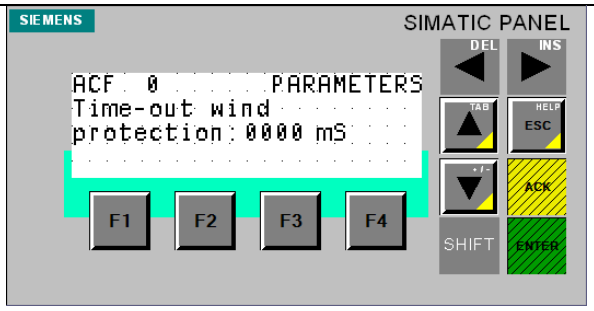
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time (in seconds) that is necessary within which the tape has to complete its unwinding action.
Press **[ENTER]** to confirm this value.
Press **[▼]** to go to the next screen.

6.7.16 ACF parameter screen 15



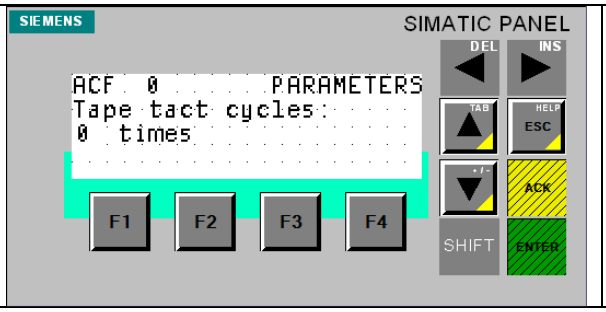
Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time (in seconds) that is necessary within which the tape carrier has to complete its winding action.
Press **[ENTER]** to confirm this value.
Press **[▼]** to go to the next screen.

6.7.17 ACF parameter screen 16 (option)



Press **[▼]** to go to the time edit line and press **ENTER**.
Use the **[▼]** and **[▲]** keys to enter the time (in seconds) that is necessary within which the protection tape has to complete its winding action.
Press **[ENTER]** to confirm this value.
Press **[▼]** to go to the next screen.

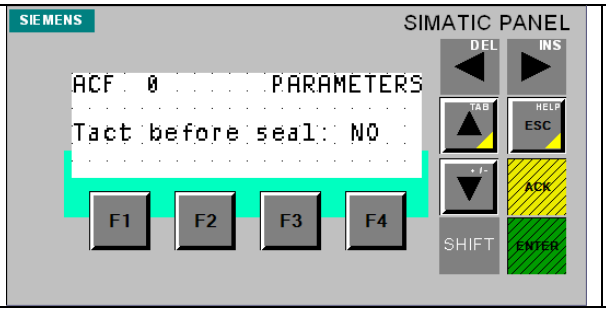
6.7.18 ACF parameter screen 17



Press **[▼]** to go to the time edit line and press **ENTER**.

Use the **[▼]** and **[▲]** keys to enter the number of cycles to make sure the full width of the thermode is covered.

6.7.19 ACF parameter screen 18

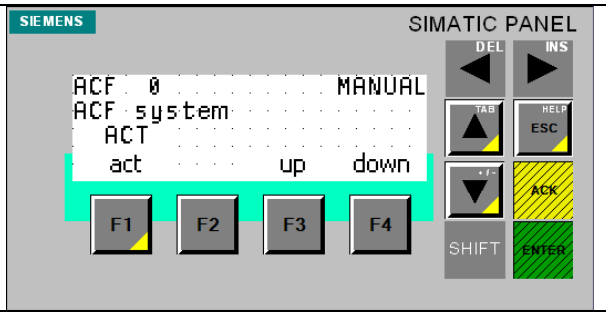


Press **[▼]** (toggle) to **YES** to inhibit the 'tact' action.

Press **[▼]** (Toggle) to **'NO'** to undo the inhibition of the tact action.

Press **[▼]** to go to the next screen.

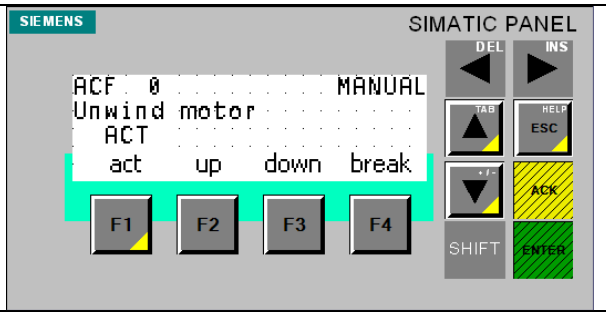
6.7.20 ACF manual screen 1



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

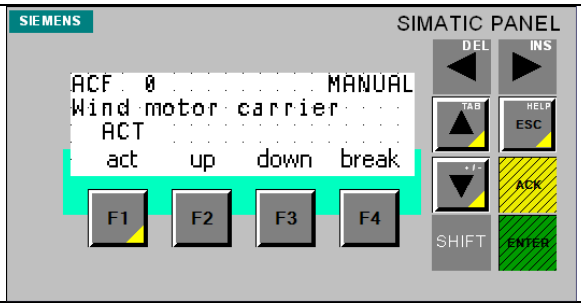
6.7.21 ACF manual screen 2



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

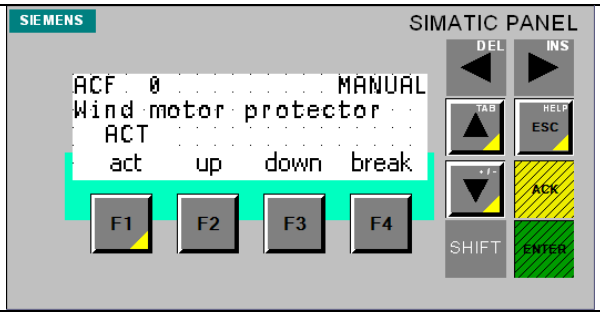
6.7.22 ACF manual screen 3



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

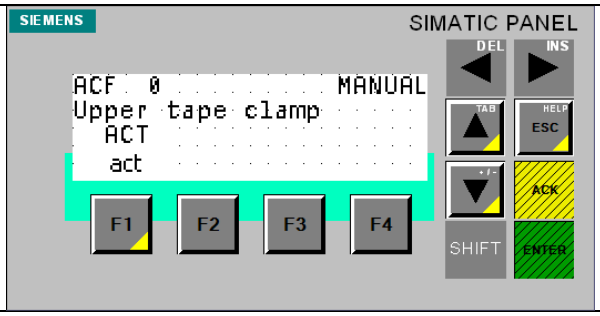
6.7.23 ACF manual screen 4



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

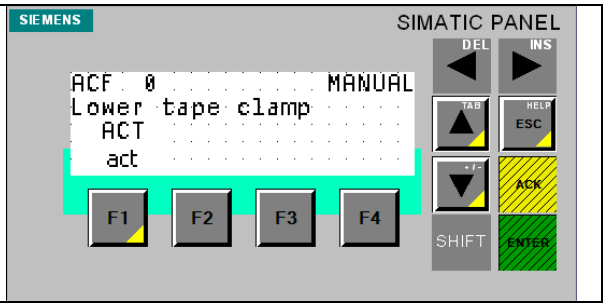
6.7.24 ACF manual screen 5



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

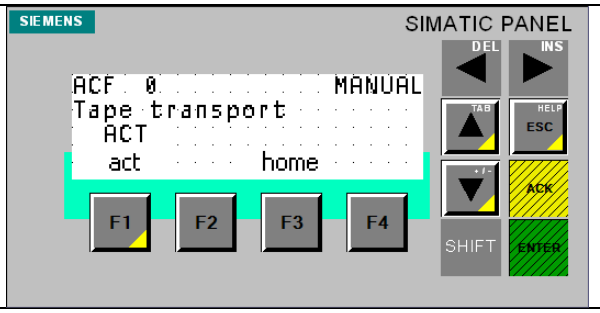
6.7.25 ACF manual screen 6



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

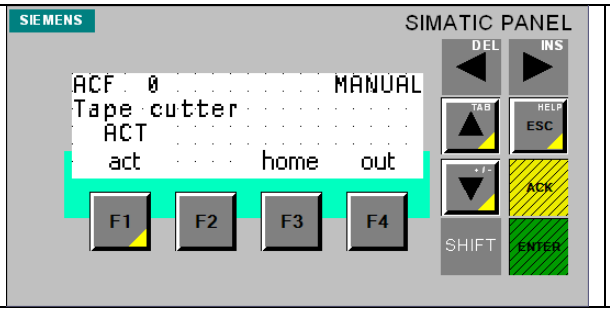
6.7.26 ACF manual screen 7



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

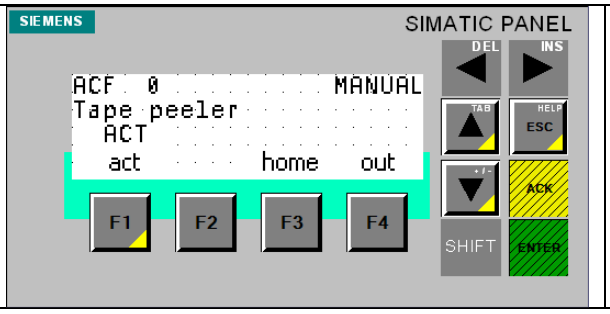
6.7.27 ACF manual screen 8



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

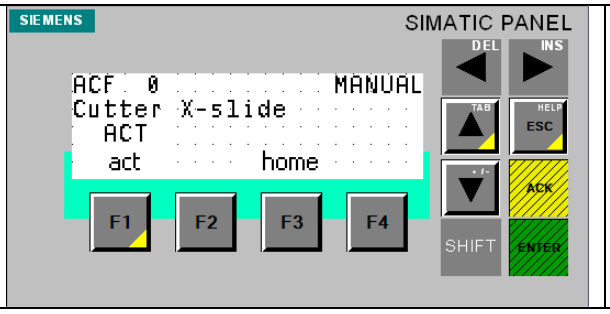
6.7.28 ACF manual screen 9



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

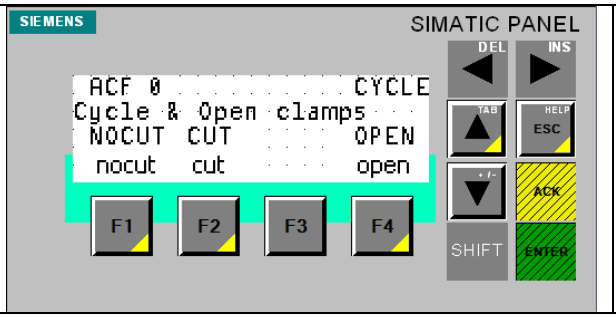
6.7.29 ACF manual screen 10



Press **[F1]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

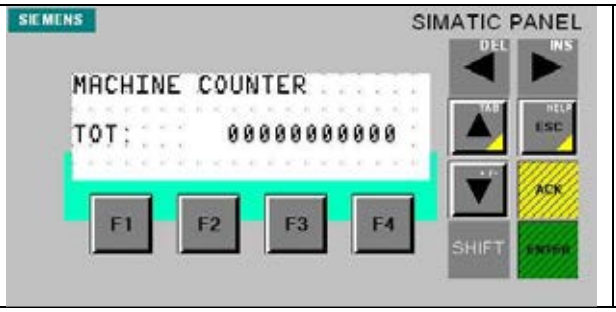
6.7.30 ACF cycle screen



Press **[F1]**, **[F2]** or **[F4]** to select the applicable action.

The text on the bottom line of the screen shows the system status.

6.8 COUNTER SCREEN



This screen shows the total number of welding processes done by the system. It cannot be edited.

6.9 OP73 SCREEN

This selection is shown in service main screen 2 and is password protected.

6.9.1 Failure messages DT-450

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

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:

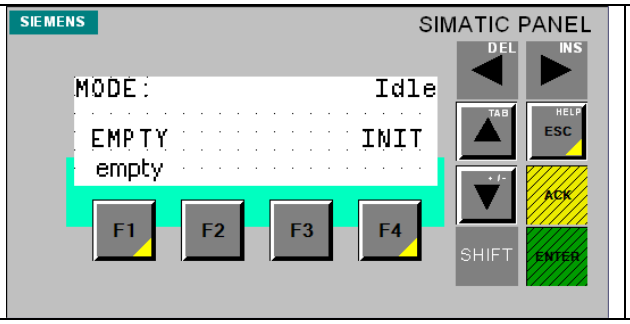
ERROR	DESCRIPTION	CHECK

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

7 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 pulsed heat systems, raise the Uniflow power source main switch to the on position. On constant heat systems, make sure the correct temperature for the product cycle is set.
4. Make sure the emergency stop is deactivated. If it is not, turn it counter-clockwise to deactivate it.
5. Clean the parts to be connected.

6. Position the parts to be connected on the fixture block. Make sure they are correctly aligned with the thermode.
7. Press the two-hand control to start the bonding cycle.
8. After the bonding cycle is completed, remove the finished product.
9. Do steps 4 thru 7 for the next product.
10. When production is completed, press the emergency stop button (D, figure 9).
11. Lower the Uniflow power source main switch to the off position
12. Set the air pressure supply to off.
13. If applicable, set the vacuum supply to off.

8 MAINTENANCE AND REPAIR

8.1 BOND HEAD ADJUSTMENTS

Refer to section 4.4.

8.2 FORCE CONTROL (OPTION)

8.2.1 Head down speed after very low to very high force changes

This is applicable when the force is typically adjusted from <100N to >100N and the descent and lifting speeds will be very high.

	**CAUTION** **Make sure both the head up and head down speed adjustment knobs are fully closed before the adjustment. If you do not obey this instruction, you may cause serious damage to the system.**

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	1. Turn the Speed up knob (A) on the control panel fully clockwise to close it. 2. Turn the Speed down adjustment knob (B) on the control panel fully clockwise to close it

1. Press the two hand controls. The head will move down. Observe the speed down.
2. Release the two hand controls and observe the speed up.
3. Gradually turn the Speed down adjustment knob (B) counterclockwise to increase the down speed.
4. When the head is down.
5. Gradually turn the Speed down adjustment knob (B) counterclockwise to increase the up speed.
6. Do steps 3 thru 7 until both the down and up speeds are optimal.

8.2.2 Head down speed after very high to very low force changes

This is applicable when the force is typically adjusted from :200N to <100N and the descent speed will be very low.

1. Press the two hand controls. The head will move down. Observe the speed down.
2. Release the two hand controls and observe the speed up.
7. Gradually turn the Speed down adjustment knob (B) counterclockwise to increase the down speed.
8. Gradually turn the Speed down adjustment knob (B) counterclockwise to increase the up speed.
9. Do steps 1 thru 8 until both the down and up speeds are optimal.

1. Gradually turn the Speed down adjustment knob (B) counterclockwise to increase the down speed.
2. When the head is down. Press the **F5** button again.
3. If necessary, adjust the HEAD UP speed adjustment knob (A) to set the up speed

8.3 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 **Amada Miyachi Europe**. Cleaning and preventive checks however, could identify possible problems.

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

8.4 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.

8.5 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

8.6 MONTHLY MAINTENANCE

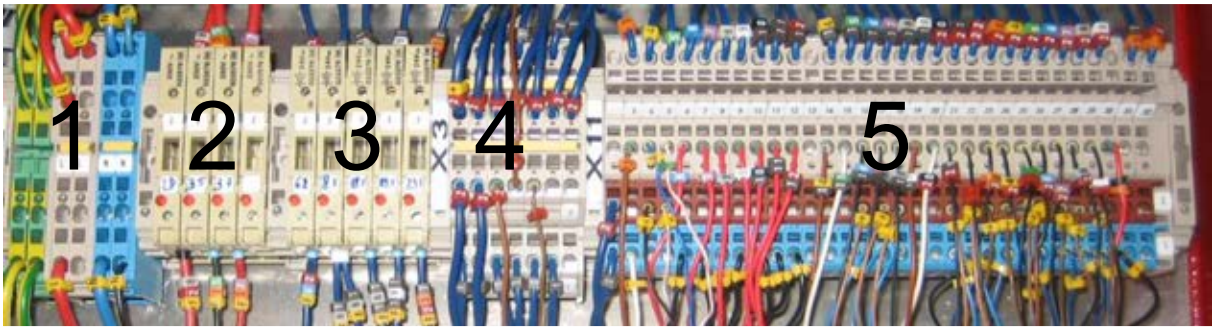
Item	Parts	Action/maintenance
Calibration	- Force calibration:	- Use load cell 67W000-0-1-2; - Consult user's manual.
	- Temperature calibration:	- Use readout 67W0007 / 67W0008 with the related Miyachi thermocouple - Consult user's manual.
	- Check plane parallelism thermode:	Use pressure paper 67W0003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

8.7 TECHNICAL MAINTENANCE

8.7.1 Fuse checks

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

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



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

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

9 CALL AMADA MIYACHI EUROPE

After receipt of an emergency call at **Amada Miyachi Europe**, 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 an **Amada Miyachi Europe** authorised person. We have highly qualified technicians who can help you to solve your problem.

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