

TPT

HB06/08/10 Wire Bonder

Operation Manual

Version 2.00



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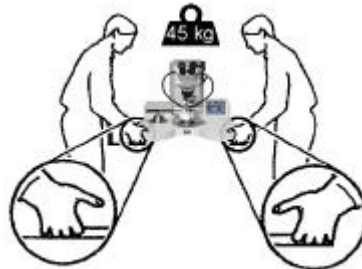
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3. UNPACKING AND PACKING INSTRUCTIONS

A. Unpacking Instructions

1. Remove the top layer of protective foam.
2. Carefully remove all the boxes and bubble wrapped items containing the bonder accessories from the crate.
3. Remove all side protective foam
4. Transfer the bonder to its final work area.

Two people needed for transportation



Do not remove nylon tie wraps, or foam shipping blocks until the bonder is ready to go into the final work area.

5. Remove Table Lock Screw



6. See section “ 5 ” (Page 6) for set-up procedures.

B. Packing Instructions

See Page 32



4. Safety Instruction

1. Read Instruction:
All the safety and operation instructions should be read before the Bonder is operated.
2. Do not remove Safety Instruction from User Manual
3. When carrying the Bonder around, do not subject the Bonder to heavy shock or vibration. Two people needed for Transportation
4. The Bonder should be installed on a solid horizontal base
5. Power Sources: The Bonder be operated only from the power source indicated on the marking label.
The Bonder is equipped with a three-wire grounding plug
Do not defeat the safety purpose of the grounding plug.
6. Protection Circuitry: The Bonder is equipped with two power line fuses at the power connector
7. The Cover should only be opened after powering down the machine and removing the power cord from the wall outlet



8. Laser Spot Light, Attention!
Don't stare into the beam. Direct viewing into the Beam can cause permanent eye damage. Please note regulations according to EN 60825-1 and VBG 93 Laser class 2, P = 1mW



9. Hot machine parts:
The maximum temperature of heated Work holder is 250°C.
Allowing parts cooling down before replacing Heated Work holder, illumination lamps or any other hot machine part.



10. EFO (Electronic Flam Off) Only If Bonder is equip with EFO System
Do not touch the electrode or the wire during bonding or when manually firing the EFO. **The System produces a High Voltage spark.** The potential shock hazard is not usually considered life threatening. However, TPT recommends that those persons with abnormal heart conditions or artificial heart stimulation devices (e.g. pacemakers) should not be permitted to operate or service this Bonder.



11. Bonding Tools have sharp edges, beware of touching them.
12. All Service and maintenance should be performed by trained, authorized personnel.

5.1. Quick Start, 7 Step to Wedge Bonding:

1. Unpacking Bonder and Remove Table Lock Screw (Page 4)
2. Install Microscope, Heater Stage, Bond Tool & Bond Wire (P.10 &P.11)
3. Power On Bonder
4. Program 1 in Setup Page 14
5. Height Setup (Page 21)
6. Install Bond Wire in Wedge Tool.
7. Start Bond with Button at X-Y Puck (Page 23)

5.2. Quick Start 8 Step to Ball Bonding:

1. Unpacking Bonder and Remove Table Lock Screw (Page 4)
2. Install Microscope, Heater Stage, Bond Tool & Bond Wire (P.10 &P.11)
3. Power On Bonder
4. Program 1 in Setup Page 14
5. Height Setup (Page 21)
6. Install Bond Wire in Wedge Tool.
7. Adjust EFO Arc with Set Up Button Page 17
- 8 Start Bond with Button at X-Y Puck (Page 23)

6. INTRODUCTION

The HB06/08/10 ultrasonic wire bonder is characterised by vertical feed of wire or ribbon, manual X-Y control of the work piece, and motorised control of the Z Axis for bond tool.

This manual is designed to provide the operator with an understanding of the equipment operation, characteristic features of the bonder, adjustments available to insure the best results in wire bonding, and troubleshooting procedures for fault isolation and correction of malfunctions.

It is strongly recommended that all operations and maintenance people read this manual thoroughly, and obtain hands-on operating experience with the bonder. The precision and ease of operation of the equipment, and quality of the bonding will be better appreciated by using the bonder. Familiarity will also facilitate expeditious introduction of the equipment in production and enhance productivity.

HB06 is a manual/ semiautomatic thermosonic wire or ribbon wedge bonder. This bonder was designed to make 0.5 to 3.0 mil gold or aluminium wire or up to 1.0 x 10. 0 mil gold or aluminium ribbon electrical interconnections.

HB08 is a manual/ semiautomatic thermosonic wire ball bonder. This bonder was designed to make 0.7 to 2 mil gold wire electrical interconnections..

HB10 is a manual/ semiautomatic thermosonic wire bonder for Wedge bonding, Ball bonding and Ball Bumping.

The HB Bonder is characterized by precision mechanism for manual X-Y control of the work platform and workpiece, a semiautomatic Z control of the bonding tool, and electronic control of the bonding variables (Force, Ultrasonics, Temperature and Time). Options designed into the HB Bonder include: Leica 6:1 Zoom Stereo-microscope with 20X eyepieces, and area illuminator; work stage with mechanical or vacuum clamping provisions. All Bond parameters and programs are operated with LCD Panel Display. A variety of options are available to enhance operability in special applications.

Semi Automatic : After press Bond Button and Hold Bond Button, Bond Tool is moving to 1st Bond Search Height. After release Bond Button 1st Bond is made, and tool is moving To Loop Height and manual move Y-Distance . After press Bond Button and Hold Bond Button Bond Tool is moving to 2nd Bond Search Height ,After release Bond Button 2nd Bond is made and Tool is moving To Start Position (Work Height)

Manual Mode with Manual Z-Control . The Operator using Manual Z-Control to move Bond Tool to . Bond surface. After touching Bond surface 1st Bond is made ,Then Operator is moving Bond Tool by using Manual Z control and X-Y Manipulator to 2nd Bond Position. After touching Bond Surface 2nd Bond is Made and Tool is rising to Start Position (Work Height)

BASIC ULTRASONIC BONDING

The Model HB06/08/10 employs the basic ultrasonic bonding method. Bonding of two metals using the ultrasonic method results from three variables: force, ultrasonic energy and time.

- Force is introduced to promote plastic flow (deformation) and intimate coupling between the bonding tool, the wire and the substrate.
- Ultrasonic (62 kHz) scrubbing displaces surface contaminants and insures metal to metal coupling.
- Time is set sufficiently long to cause solid state diffusion.

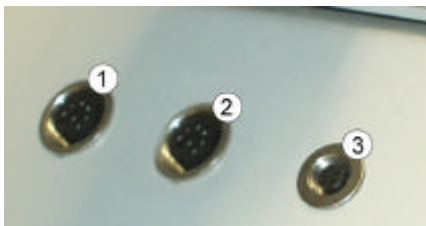
If the Model HB06/08/10 is used for gold wire bonding, heat is used as a fourth variable to eliminate surface contaminants.

7. HB06/08/10 front view

Figure 1

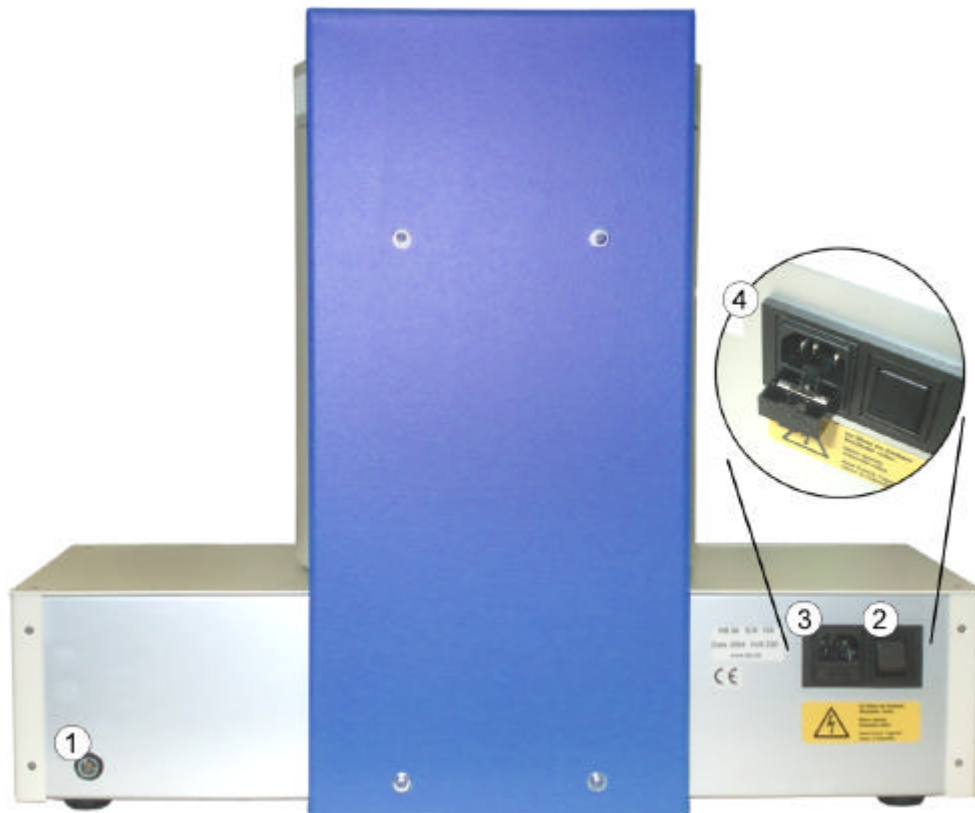


1. Microscope
2. Dual Fiber Optic Illuminator
3. Bond Head
4. LCD Panel Operator System
5. Control – Puck
6. Heater Stage
7. X - Y-Bondtable,
8. Manual Z - Lever



1. Heater Stage Connector
2. Not used
3. Tool Heater Connector

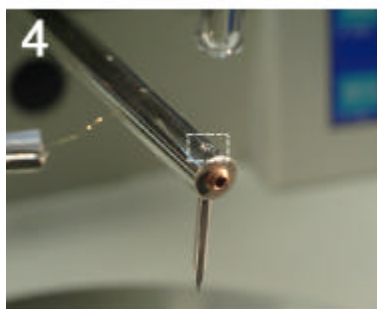
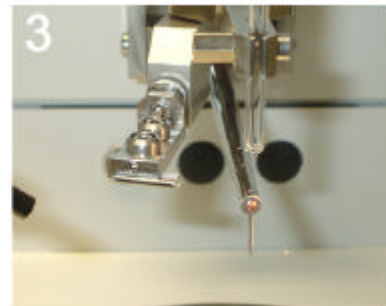
8. HB06/08/10 back view



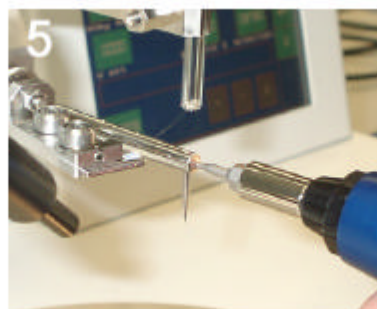
- 1. Foot switch , Stitch bonding
- 2. On / Off Switch
- 3. Power Connector AC 230V Europe T 1,6 A Fuse
 AC 115V USA T 1,6 A Fuse
 AC 100V Japan T 1,6 A Fuse

Figure 2

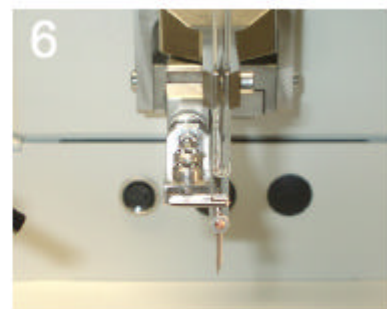
9. Tool Installation



Tool must be flush with the top of the transducer



5. screw tool with 25 Ncm



Wedge and Capillary in Ball bonding Transducer with Tool Heater

Figure 3

The bonding tool is fitted into the 1/16 inch diameter hole in the ultrasonic transducer and the top of the wedge tool must be flush with the top of the transducer. Secure by tightening the special set screw with Torque Wrench 25 cNm.

Wedge bonding Tool: 1/16" dia. x 0.750 long bonding wedge with a '45 wire or ribbon feed angle is recommended.

Ball Bond Tool : Capillary 1/16" dia. x 0.450 long is recommended
Refer to your tool supplier catalogue for the tool suitable for the specific application.

10. Loading Wire to Motorised Wire Spool

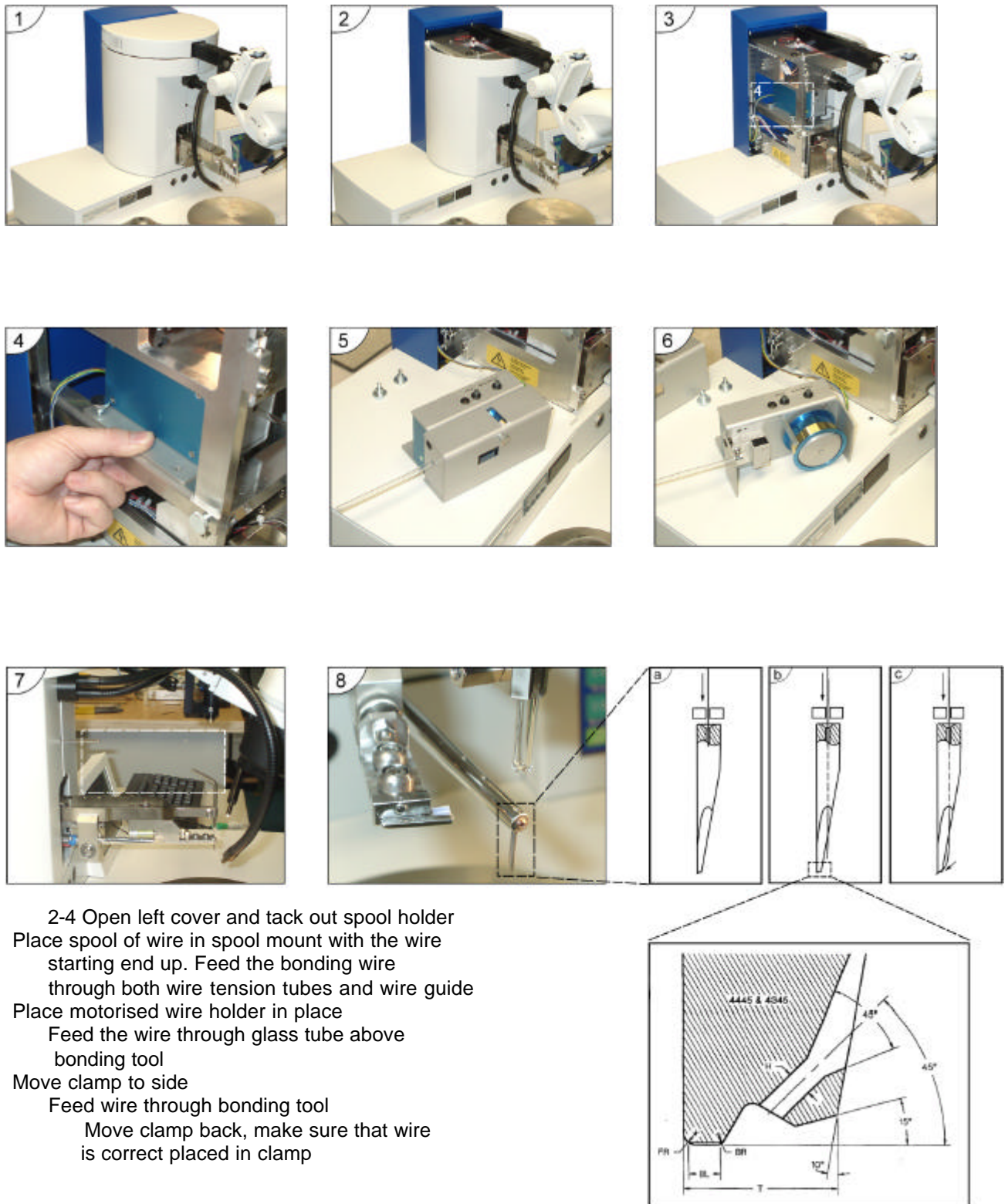
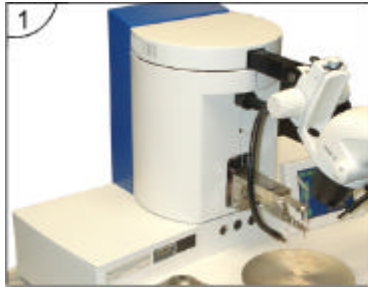


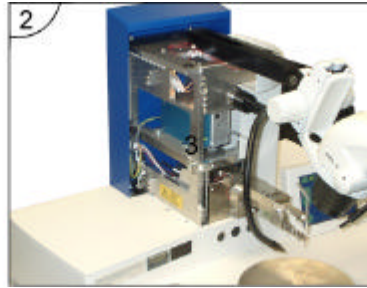
Figure 4

For motorised Wire Spool Maximum Wire Diameter 50 μ and Ribbon until 100 x 20 μ

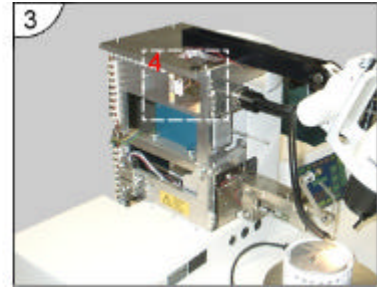
11. Change Halogen Lamp 8V 20W



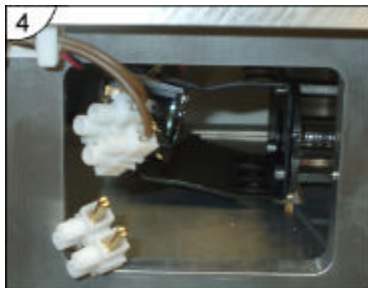
1. Switch Off Bonder



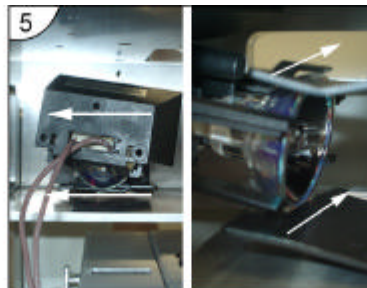
2. remove left and upper housing



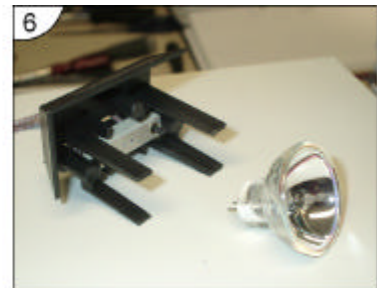
3. remove back



4. disconnect cable



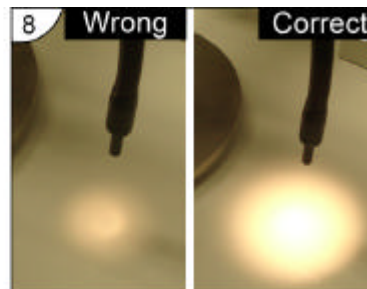
5. remove lamp holder



6. change lamp



7. adjust lamp by moving
left and right



8. until light is bright

Figure 5

12. LCD Operator System

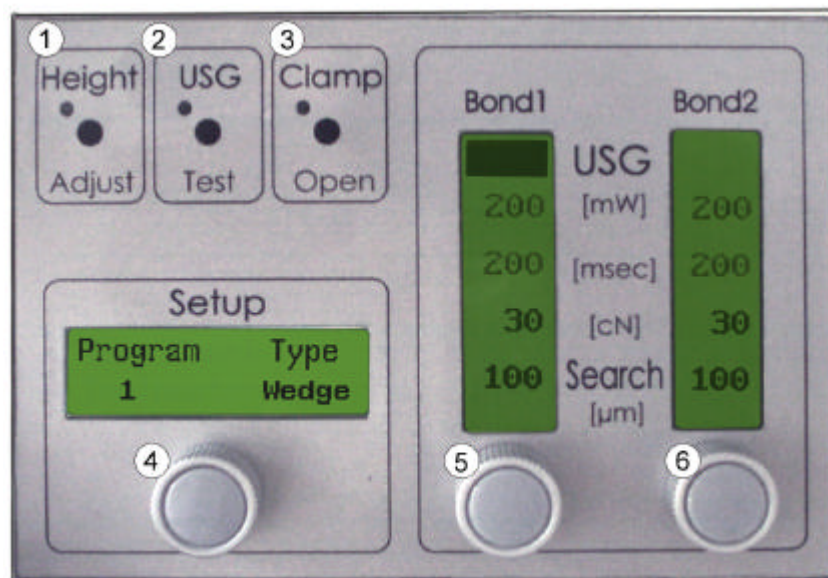


Figure 6

1. Height Adjust switch for Auto height Set Up (see page 21)
for 1. and 2. Bond surface
2. Test USG switch for test of US-Energy ON / OFF
3. Clamp switch for Wire clamp open/closed
4. Setup Multifunction Button (Page 14)
Push 1 sec. for Heater Stage & Tool Temperature

Chuck Temp 120°C
Tool Temp n.c.

n.c. = Heater Stage / Tool Heater not connected

5. Bond 1 Bond 1 Parameter Adjustment
6. Bond 2 Bond 2 Parameter Adjustment

13. Setup Multifunction Button

Twist is marking a Function or changing a Value

Push is changing or Enter a new Value

		<div>Program 1</div> <div>Type Wedge</div>	<div>Chuck Temp 120°C</div> <div>Tool Temp n.c.</div>
Push Set Up 1 sec. to display Heater Stage & Tool Temperature n.c. = Heater Stage / Tool Heater not connected			
1. Program 1 to 20			<div>Program 1</div> <div>push to change</div>
2. Bond Type	HB10 Wedge, Ball or Bump Bonding HB08 only Ball & Bump Bonding HB06 only Wedge Bonding		<div>Bondtype Wedge</div> <div>push to change</div>
3. H- Start 1000μ to 20.000μ	Start Height for Bond Tool		<div>H-Start 12650μm</div> <div>push to change</div>
4. H- Loop 0 bis 5000 μ	Loop Height		<div>H-Loop 500μm</div> <div>push to change</div>
5. L- Tail 0 bis 500μ	Tail Length		<div>L-Tail 100μm</div> <div>push to change</div>
6. Power EFO 0 bis 100%	only at Ball Bonding HB08 and HB10 Bonder .		<div>Power EFO 100%</div> <div>push to change</div>
7. Temperatur Chuck 0 – 250° C			<div>Temp.Chuck 120°C</div> <div>push to change</div>
8. Temperatur Tool 0 – 250°C			<div>Temp.Tool 200°C</div> <div>push to change</div>
9. Bond Counter 0 bis 999			<div>Bondcount 56</div> <div>push to change</div>

Figure 8

14. Bond 1 & 2 Parameter

Twist is marking a Function or changing a Value

Push is changing or Enter a new Value



Figure 7

- | | | |
|-----|--------|---|
| 1. | Bond 1 | Push to activate Bond 1 for Bonding |
| 2. | U/S | Display for 1st. Bond US energy |
| 3. | Time | Display for 1st. Bond time |
| 4. | Force | Display for 1st. Bond force |
| 5. | Search | Display for 1st. search height adjustment |
| 6. | Status | Black = Bond 1 Activate |
| 7. | Bond 2 | Push to activate Bond 2 for Bonding |
| 8. | U/S | Display for 2nd. Bond US energy |
| 9. | Time | Display for 2nd Bond time |
| 10. | Force | Display for 2nd Bond force |
| 11. | Search | Display for 2nd search height adjustment |
| 12. | Status | Black = Bond 2 Aktiv |

To Adjust Bonding Parameter

Twist to Value of change (US, Time, Force, Search)

Push and twist to change Value

Push to Enter Value

15. Bond arm HB06/08/10 Bonder

12 mm Wedge Bond tool – deep access

200 mm Diameter Work stage

165 mm deep reach transducer

90° Bond Tool

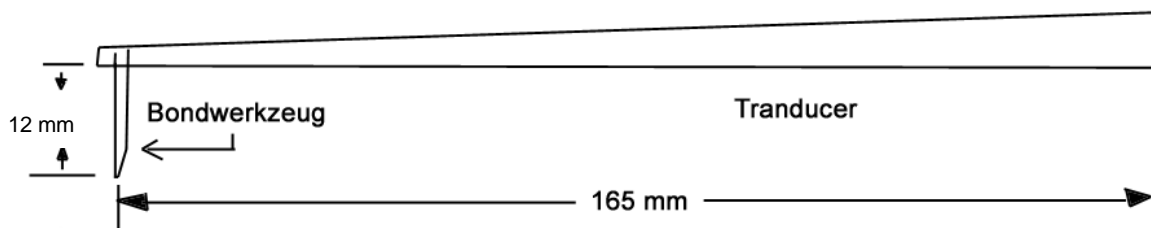
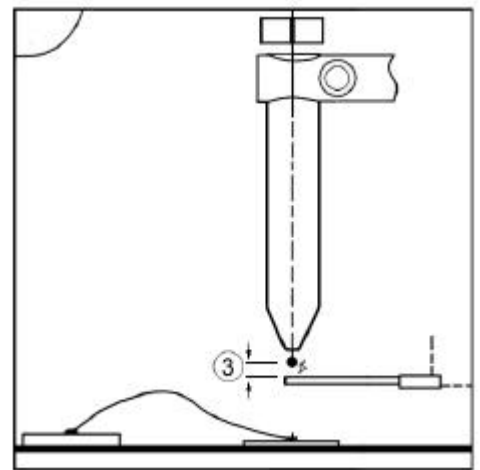
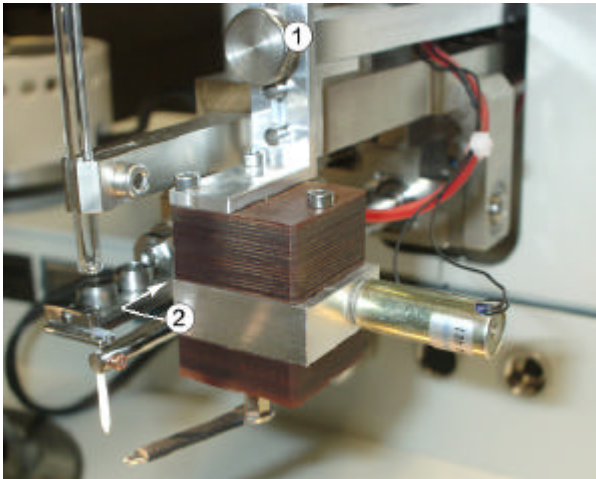


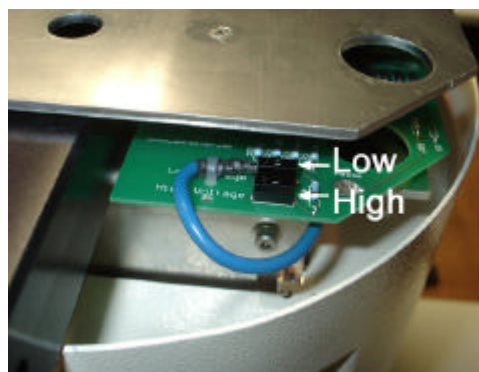
Figure 12

16. EFO System (Ball Bonder HB08 & HB10)



1. EFO Wand height adjustment
2. EFO Wand side adjustment
3. gap between wire and EFO Wand should be
100 μ to 300 μ for 25 μ Wire and
300 μ to 600 μ for 50 μ Wire

DANGER: Do not touch EFO Wand , 750V discharge



4. LOW für 17 μ bis 25 μ Draht
5. HIGH für 30 μ bis 50 μ Draht

Figure 16

18. Bonder Installation

18.1. Set the HB Bonder on the workbench and remove all tagged shipping blocks, shipping screws, and tie wrap. All of the shipping provisions may be removed without disassembly of the bonder.

18.2. Unpack the boxes containing the accessories. Check the contents of these boxes against your packing list.

18.3 Attach the Dual Fiber Optic arm (Option H55):

Dual Fiber Optic Illuminator: The adjustable dual fiber optic illuminator incorporates 8 volt, 20 watt halogen lamp.

To change lamp open upper and left cover (Figure 5 / Page 12)

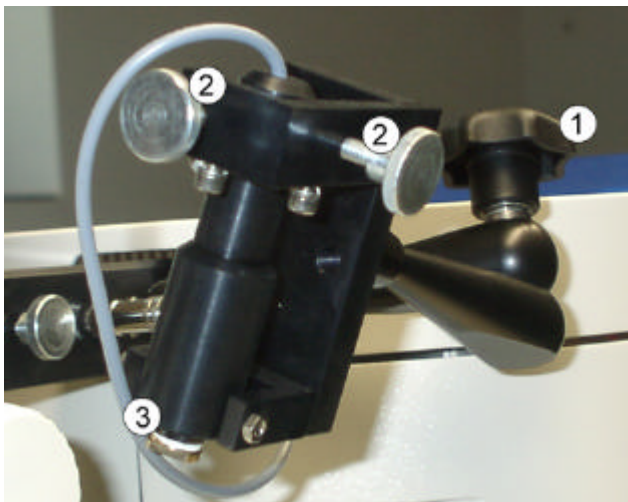
18.4 Assemble the microscope to its mounting arm. Install the microscope into the optical mount of the bonder and secure it in position with the set screw on the right side of the microscope mount. Figure 1 Page 8

18.5 Laser Spotlight (Option H50)

Mount the Spotlight holder on the Microscope holder Figure 1 (3) (Page 7)

Beam-Distance to Bondlevel is about 100 mm

ATTENTION ! Don't stare into the beam. Direct viewing into the beam or reflected beam can cause permanent eye damage. Laser class 2 / $P_o = 1 \text{ mW}$ / $\lambda = 635 \text{ nm}$



1. Knob for rough adjustment
2. Screw for fine adjustment
3. Screw for focus adjustment

Figure 21

18.6 Tool Installation

The bonding tool is fitted into the 1/16 inch diameter hole in the ultrasonic transducer and the top of the wedge tool must be flush with the top of the transducer. Secure by tightening the special set screw with Torque Wrench 25 cNm.

Wedge bonding Tool: 1/16" dia. x 0.750 long bonding wedge with a '45 wire or ribbon feed angle is recommended.

Ball Bond Tool : Capillary 1/16" dia. x 0.450 long is recommended

Refer to your tool supplier catalogue for the tool suitable for the specific application.

Tool Installation Figure 3 (Page 10)

18.7 Heated Work Stage

Plug in the work stage cable into the matching connector.

TPT optional work stage H26 is a heated work stage with provisions for both vacuum clamping and mechanical clamping. Mechanical clamping provisions allow clamping of work pieces with dimensions of up to 25 mm. Mechanical clamping adjustments are accomplished with the adjustable back stop. When the vacuum clamping provision is used, a vacuum hose must be attached to the work stage vacuum tube to provide a vacuum in the hole in the work stage top plate.



1. Mechanical clamping
2. Screw to remove plate
3. Vacuum Hose



Figure 20

18.8 Power-On

Before plugging the power cord into the A. C. power source, check the label located on the rear of the HB Bonder . If the label does not agree with the available A. C. power, do not plug in the power cord. Check the A. C. power socket for correct wiring.
POWER ON/OFF Switch is on back left side,
LCD Display light on indicate that POWER is on.

18.9 Loading the Bonding Wire in the Motorised Wire Spool

Open left cover and tack out spool holder
Place spool of wire in spool mount with the wire starting end up.
(Install Wire Guide Glass tubes in Wire Spool Holder and Bondhead Fig. 4 Page 10)
Feed the bonding wire through wire tension tubes and wire guide
Place motorized wire holder in place
Feed the wire through glass tube above bonding tool
Move clamp to side
Feed wire through bonding tool
Move clamp back, make sure that wire is correct placed in clamp

For motorised Wire Spool Maximum Wire Diameter 50 μ and Ribbon until 100 x 20 μ
Figure 4 Loading Bonding Wire (Page 11)

18.10. Temperature Controller for Work Stage & Tool Heater

only at Gold Wire 120°C – 150°C



Figur 17

Twist is marking a Function or changing a Value

Push is changing or Enter a new Value



Push Set Up 1 sec. to display Heater Stage & Tool Temperature
n.c. = Heater Stage / Tool Heater not connected

18.11 Adjust Search height, Loop height and Work height

A: Push "Height Adjust" Button: see page 13

Work-Height is set automatic to 25000 after Bond level

Press Start Button on Control-Puck (Page 23 Figure 15)

Bondtool is moving to 1st Bond level .

Measured Height is Displayed and automatically saved

Press Start Button on Control-Puck (Page 23 Figure 15)

Bondtool is moving to 2nd.Bond level

Measured Height is Displayed and automatically saved

B. Adjust Search height 1st Bond = height tool stop before 1st.bond

Twist to Search at Bond 1

Push and twist to change Value

Push to Enter Value

C. Adjust Search height 2nd.Bond = height tool stop before 2nd.bond

Twist to Search at Bond 2

Push and twist to change Value

Push to Enter Value

D: Adjust Loop Height = Height Bond tool rise after 1st Bond

Twist "Set Up" Button to H - Loop

Push and twist to change Value

Push to Enter Value

C: Adjust Work height = Height Bond tool rise after 2nd Bond

Twist "Set Up" Button to Start - Height

Push and twist to change Value

Push to Enter Value

18.12 Adjust Bonding Parameter

Push Bond 1 or 2

Twist to Value of change (US, Time, Force, Search)

Push and twist to change Value

Push to Enter Value

U/S Energy 0 to 1000 mW programmable

Time 15 to 5000 millisec. programmable

Force 15 to 100 cNm programmable

Starting Parameters

Table below shows initial set-up parameters only. Actual parameter values will vary depending on process, materials and specific applications.

		Bond Wire:	.7 Mil 17μ	1.0 Mil 25μ	2 Mil 50μ
<u>WEDGE Bonden</u>					
US Energy	1st		150	220	400
	2nd		180	280	400
Time	1st		150	200	200
	2nd		150	200	200
Force	1st		20	30	40
	2nd		20	30	40
Temperature			120°C	120°C	120°C
Wedge Tool: 19 mm Length, Hole Diameter			38μ	38μ	102μ

		Bond Wire:	.7 Mil 17μ	1.0 Mil 25μ	2 Mil 50μ
<u>Ball Bonden</u>					
US Energy	1st		150	200	300
	2nd		180	350	400
Time	1st		150	200	200
	2nd		150	200	200
Force	1st		100	300	40
	2nd		100	300	40
Temperature			120°C	120°C	120°C
Kapillare Tool: 11,1 mm Length, Hole Diameter			25μ	38μ	89μ

18.13 Adjust Tail Parameter

Twist "Set Up" Button to "Tail"
Push and twist to change Value
Push to Enter Value

18.14 Control Puck & Bond Operation Sequent

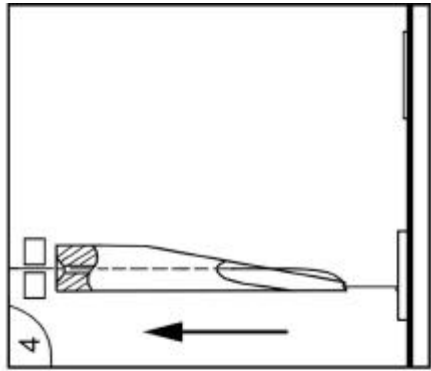


Figure 15 Control Puck

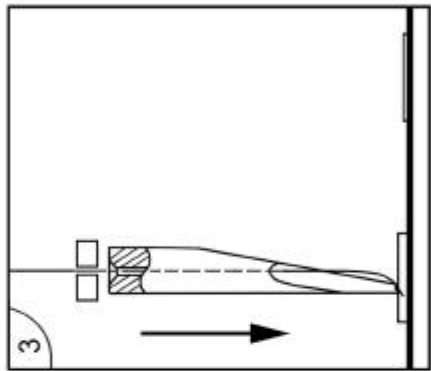
1. Bond Start Button
2. Tail Feed Back
3. Tail Feed Forwards

18.15 Stitch Bonden

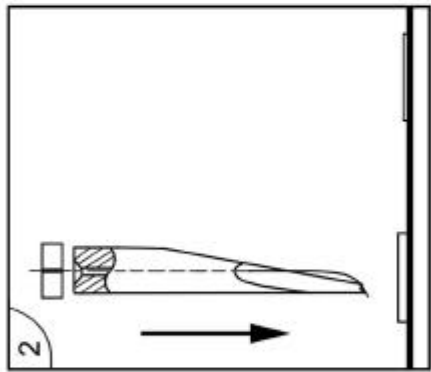
When the stitch Foot switch is actuated before second bond, the bonder will not terminate the bonding cycle after the second bond. Rather, the clamps remain open allowing additional bonds to be completed. As long as the stitch switch is depressed, the stitching will be continued . When the switch is released, the next bond will be the terminating bond.



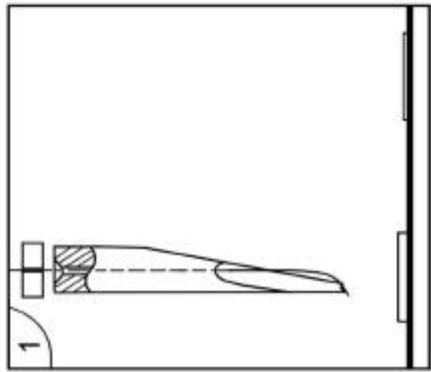
4. clamp opens and tool rise to loop height



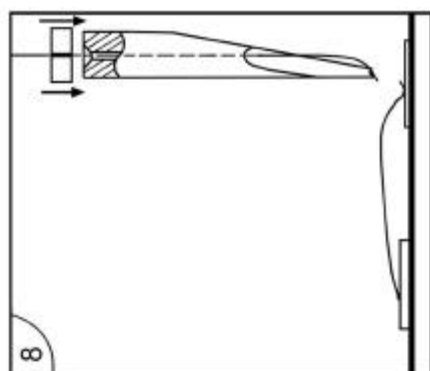
3. Operator releases Control Puck Start button
Bond tool descends to 1st. Bond TDSW activate all Bond Parameters



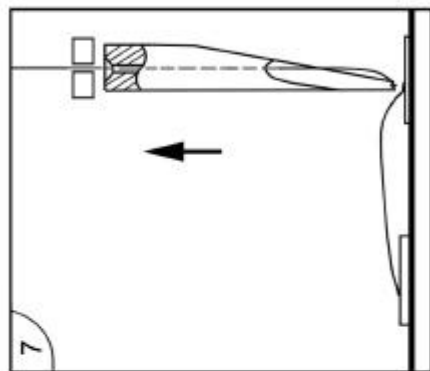
2. Operator holds down Control Puck Start button
Bond Head travels down to 1st. search height
Operator repositions target if necessary.



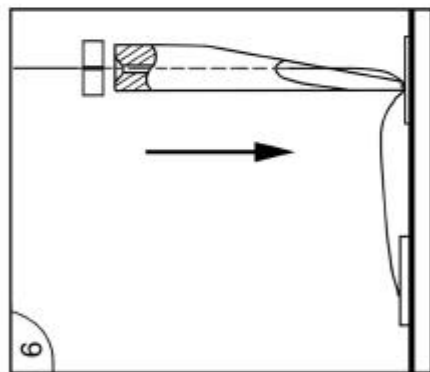
1. Start Position
Operator positions target under spotlight. Clamp is closed



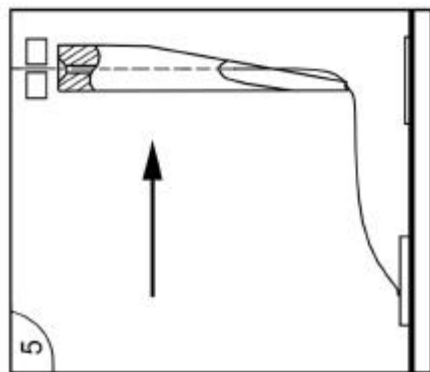
8. Clamp moves Wire to programmed Tail length position



7. Tool rise to programmed Work height position

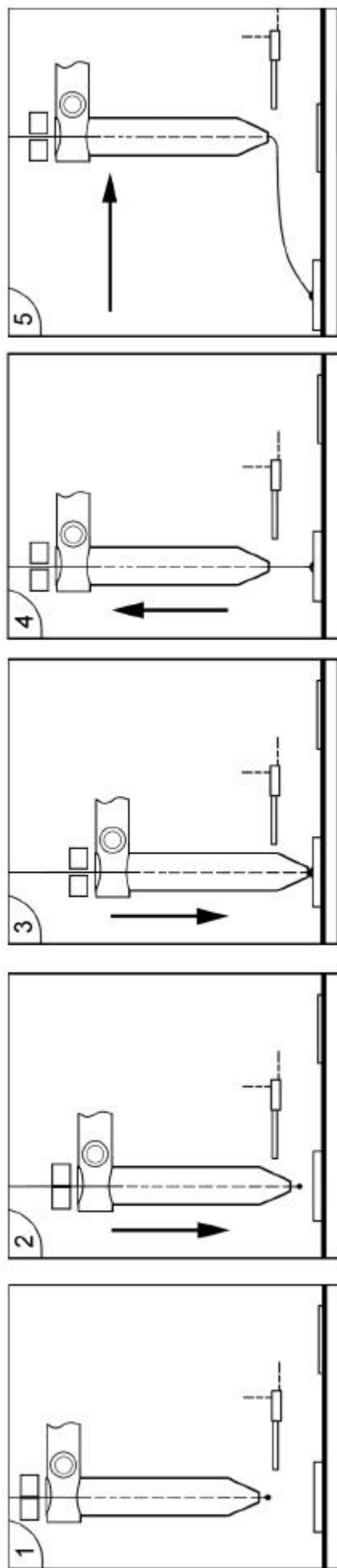


6. Operator holds down Control Puck Start button. Bond Head travels down to 2nd. search height. Operator repositions target if necessary..
Operator releases Control Puck Start button. Bond tool descends to 2nd Bond .TDSW activate all Bond Parameters

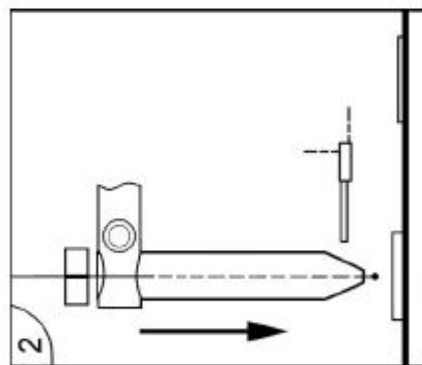


5. Operator positions 2nd target under spotlight

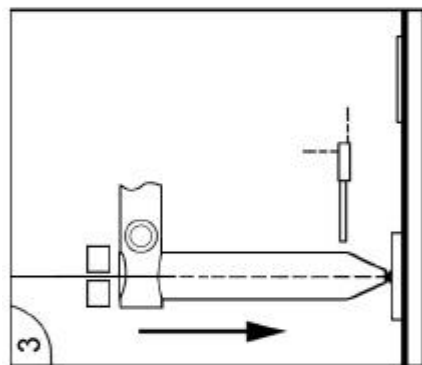
19. Wedge Bonding Sequence
Figure 13



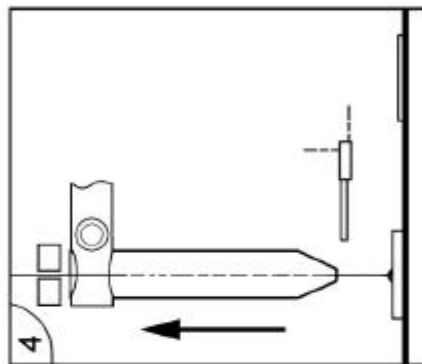
1. Start Position
Operator positions target under
spotlight. Clamp is closed



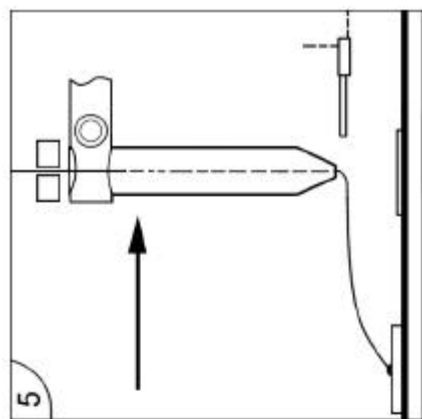
2. Operator holds down Control
Puck Start button , Clamp opens
Bond Head travels down to
1st.search height
Operator repositions target if
necessary.



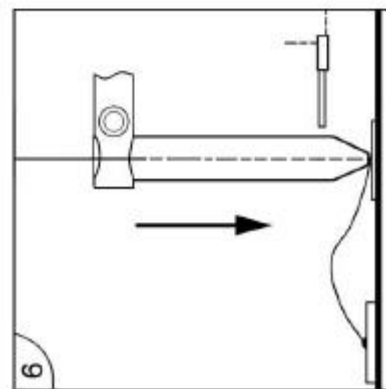
3. Operator releases Control Puck
Start button
Bond tool descends to 1st. Bond
TDSW activate all Bond
Parameters



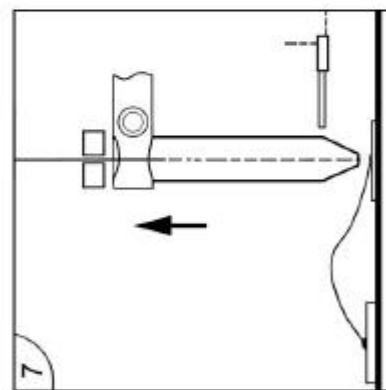
4. after Bond tool rise to loop height



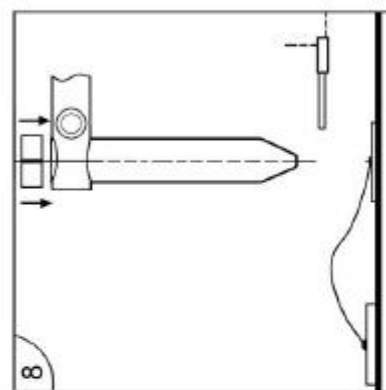
5. Operator positions 2nd target
under spotlight



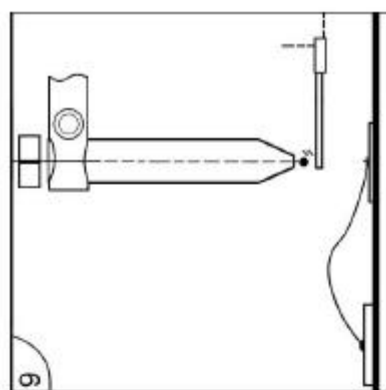
6. Operator holds down Control Puck Start
button
Bond Head travels down to 2nd.search height
Operator repositions target if necessary.
Operator releases Control Puck Start button
Bond tool descends to 2nd Bond
TDSW activate all Bond Parameters



7. Tool rise to programmed
Work height position



9. EFO Wand moves under Tail (Wire
end) and forms Ball



20. Ball Bonding Sequence
Figure 14

21. Ultrasonic Generator

The signal from the logic control circuit, the ultrasonic generator provides 62 kHz power to the transducer at a level set on program. The ultrasonic energy is applied until the bond time is complete. (PLL) phase loop lock system is provided to insure work piece coupling, and to maintain transducer operation at the specified frequency.

22. Force system

The force generator provides current to effect the bond force. On signal from the logic control circuit, the current is provided to the force solenoid in a ramped fashion until the preset level is reached. At this level the power is held until the bond time is over. The force level and bond time are preset by the front touch panel controls.

23.TDSW Touch down switch adjustment

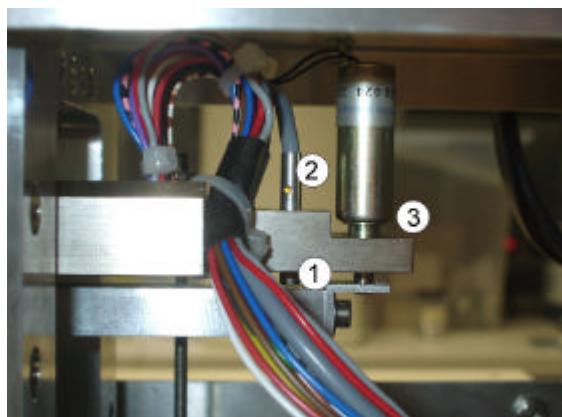


Figure 23 TDSW Touch Down Switch

1. TDSW Touch Down Switch
2. Loosen screw on side and adjust gap between Bond arm and TDSW with Set screw until yellow (2) light is ON = No touch down

24. Clamp Force and gap Adjustment

There is no convenient way to measure the clamp force. The user must therefore be alert to deformation of the wire to identify excess force. When force is inadequate, the wire clamps will not hold the wire in the tool during closed clamp conditions or will not break the wire after second bond.

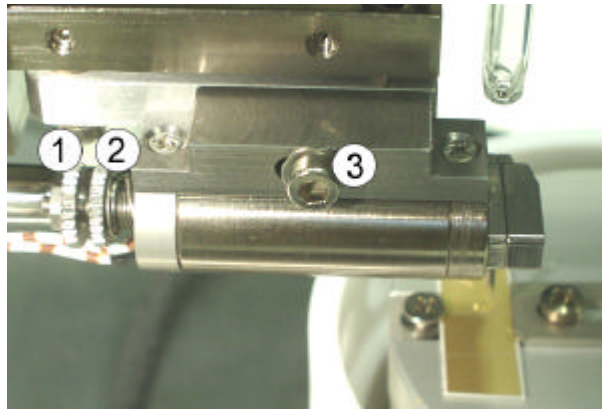


Figure 18

1. Clamp gap adjustment
2. Clamp force adjustment
3. Clamp Position adjustment

25. Motorised Wire Spool

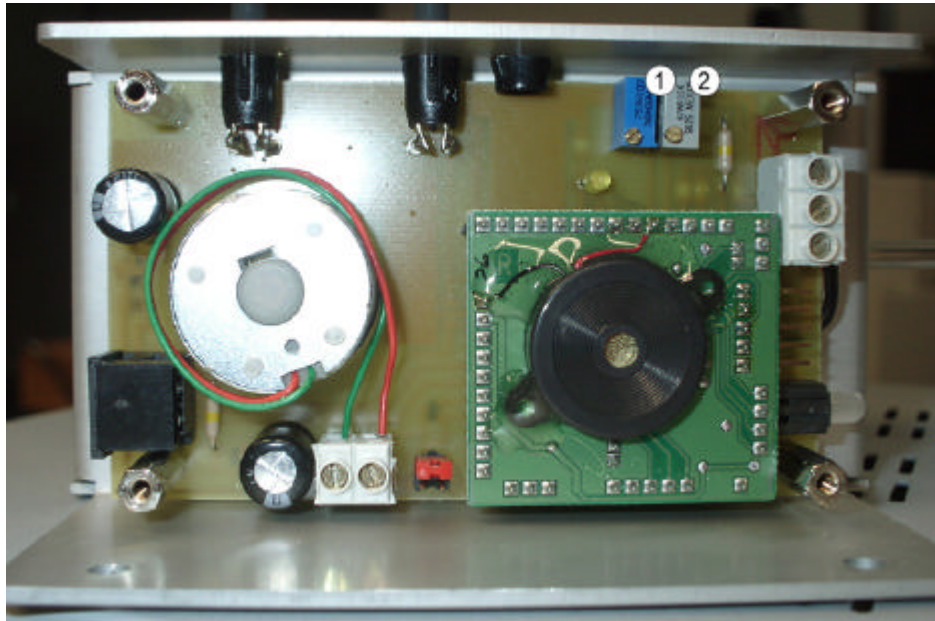


Figure 19

1. Adjustment for run time of motor (clock wise = more time)
2. Adjustment for sensibly of start sensor (clock wise = less sensible)

26. Tool Heater

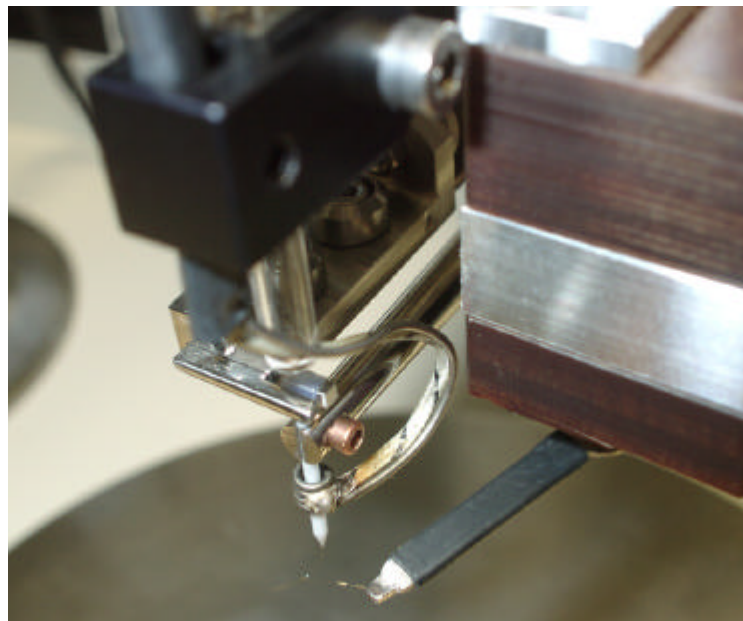


Figure 24

Option H40 Tool Heater with Temperature Controller
Option H41 Spare Tool Heater with Thermocouple

27. Troubleshooting

Troubleshooting for bonding problems see section
"Wire Bond Technology"

HB Bonder technical problems:

Symptom / Error Message

Cause / Corrective Action

A. No Bond Head movement

switch Bonder Off/On
Adjust TDSW switch (Page 29)

B. No Ball after Bond

Check if in Menu Bond Mode Ball is ON
Check gap between wire and EFO Wand
(for 25 μ wire 100 to 400 μ)

D: Tail is moving sideways
under Wedge Tool

Tool longer as 19 mm
Hole in Wedge to big
Clamp defect
Wedge defect

E: Error no USG found using Demo Mode

Transducer not connected on US Board
US Board Defect
D-Sub Connect Bond head not connected
24V missing
Motherboard Defect

H. Display Freezes after Power on
and touching „ Setup“ button

The cause is TDSW is not closed
(not closed LED OFF)

A: to less Static force,
adjust static force to 20g to 25g
see page 28 Reed wheel #1
B: TDSW gap is to big,
adjust TDSW gap see page 29 user manual
C: No free movement of Transducer
Transducer can not go to upper position
Check mechanical parts for free movement

28. Bonding Tools for HB Wire Bonder:

Capillary:	25μ Wire	41413-0010-334	Micro Swiss 11.10 mm Tool length
	50μ Wire	41413-0020-334	Micro Swiss
	25μ Wire	1572-15-437 GM	Gaiser 11 mm Tool length
	25μ Wire	1572-15-750 GM	Gaiser 19 mm Tool length
	50μ Wire	1572-35-437 GM	Gaiser
Wedge	25μ Wire	4445-1520-3/4-CG-F	Gaiser
	50μ Wire	4445-3540-3/4-CG-F	Gaiser
	20 x 100 μ Ribbon	4645R-.8-4-3.0-3/4-CG	Gaiser

29. Deep Access 90° Wedge Tool

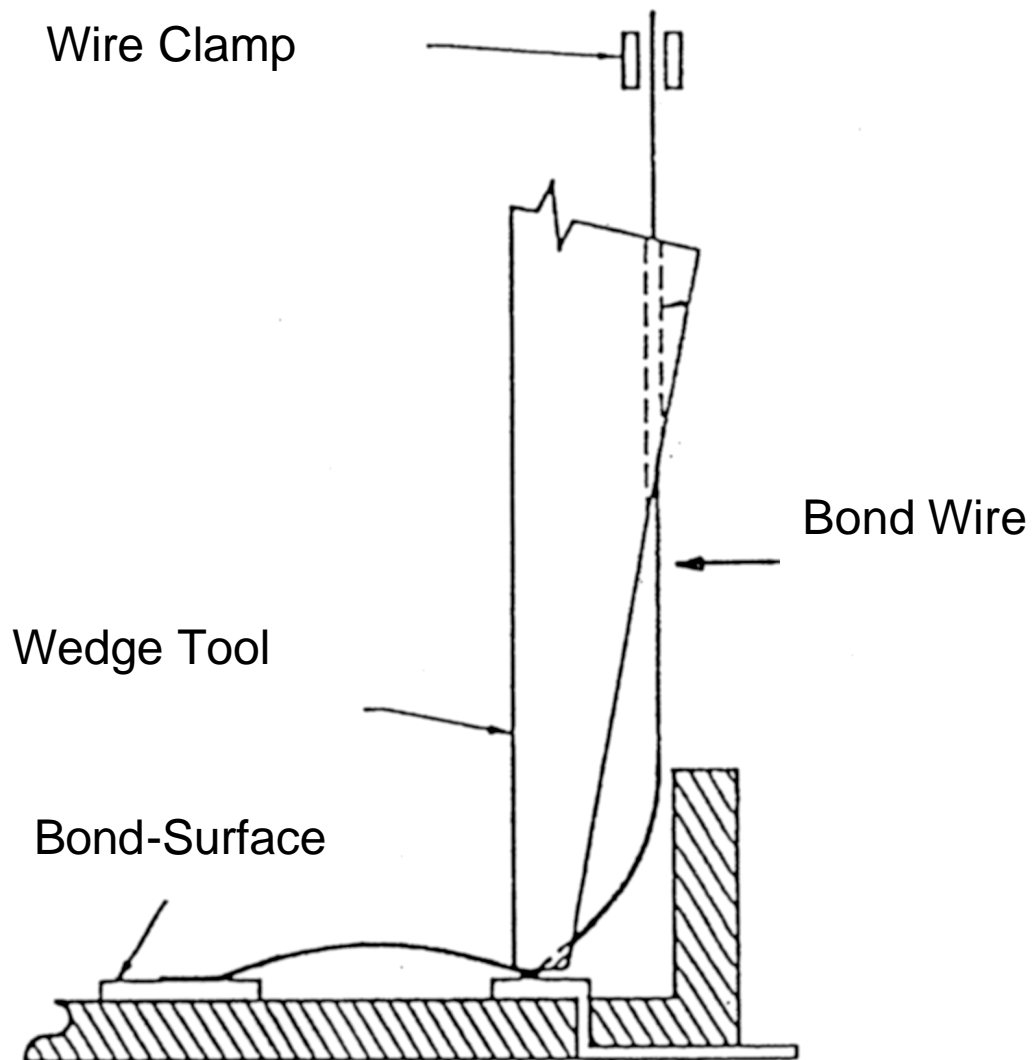


Figure 11

30. Packing Instructions

1. Remove from Bonder:
 - A. Bondtool (wedge, Capillary)
 - B. Bond Wire
 - C. Glass wire Guide
 - D. Dual Fiber Optic Illuminator
 - E. Microscope with Holder
 - F. Laser Spot light targeting system
 - G. Heater Stage
 - I. and any other options from Bonder.
2. Secure the work plate by inserting the Table Lock Screw.
Tighten softly the screw to secure the work plate.
3. Secure Display with Carton
4. Secure Tower-Cover with soft foam
5. Secure between Transducer and clamp with foam
6. Carefully move Bonder in wooden box

Pack accessories (i.e., work stage, microscope, illuminator, eyepieces, etc.) in bubble wrap in separate boxes.
Position these items at suitable locations around the sides Of the bonder so that they are secure from movement and so the to foam cover can be installed.
7. Place the foam cover around and over Bonder .
8. Position and bolt the wooden cover on to the crate.

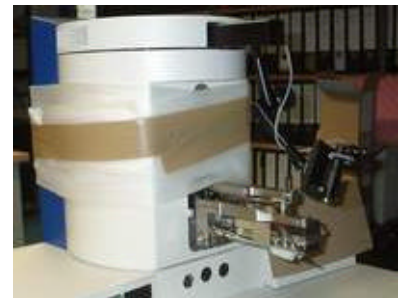
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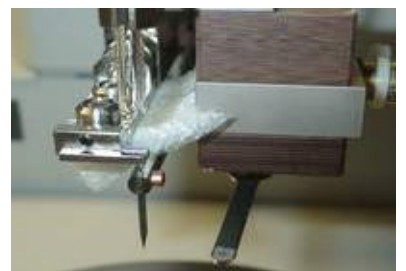
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4



5



6



7



8



31. Specification

The HB06/08/10 is a bench top size wire bonder, easy to operate and ideal for laboratories, pilot and pre-production runs and small scale production lines. One Deep-access 90° Bond head for wire and ribbon bonding. No hardware change necessary. Easy operation with LCD Panel Operator System. PLL Ultrasonic generator, Stitch bonding, 20 Program storage capacities Heater stage and Tool Heater Controller. Motorised 2" Wire Spool and Motorised Wire Clamp.

Technical specifications

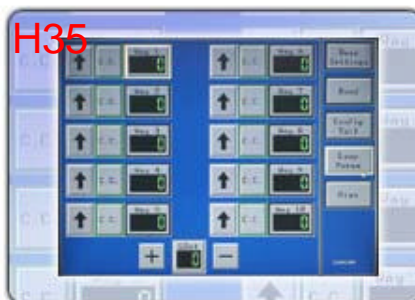
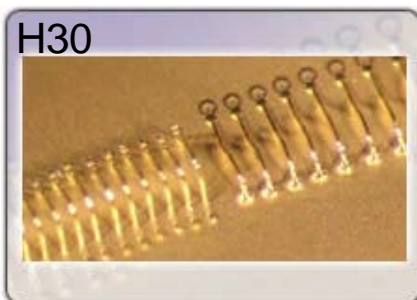
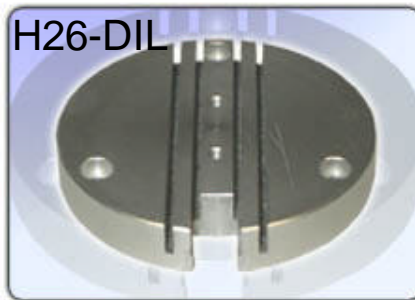
Ultrasonic system	62 kHz transducer, PLL Control
Ultrasonic power :	0 - 2 watt output
Bond time:	15 - 2000 msec.
Bond force:	15 - 100 grams
Gold and Aluminium wire Ø	17 to 76µ (0,7 to 3 mil)
Gold ribbon	up to 25 x 250µ (1x 10 mil)
Motorised Wire Spool	50,8 mm (2 inch) Option
Wire termination	Clamp tear
Wire feed angle	90° for Wire and Ribbon
Motorized Z travel	15 mm
Throat depth	165 mm (6,7")
Fine Table motion	10 mm (0,55 ")
Mouse ratio	7:1
Temperature controller	up to 250°C +/- 1°C
Electrical Requirements	100 – 120 / 220 - 240V +/-10% 50/60 Hz 10A max.
Operating temperature range	18°C – 32°C
Physical Dimensions	680 mm W x 640 mm D x 490 mm H
Weight	Net 50 kg
Industry Standard	CE standard

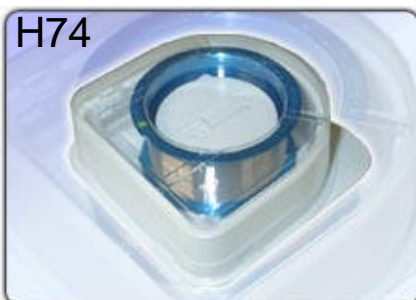
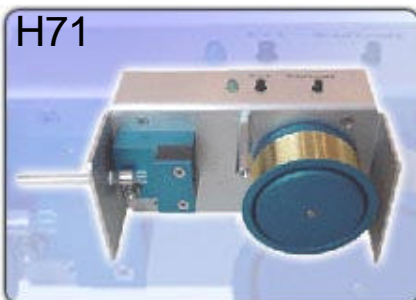
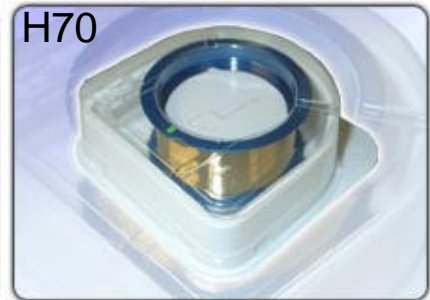
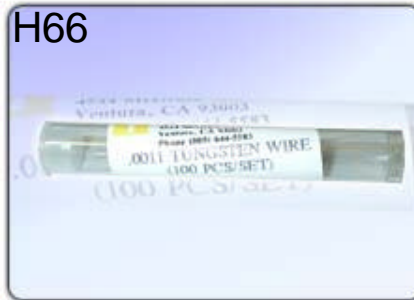
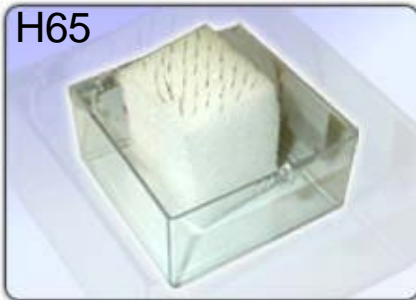
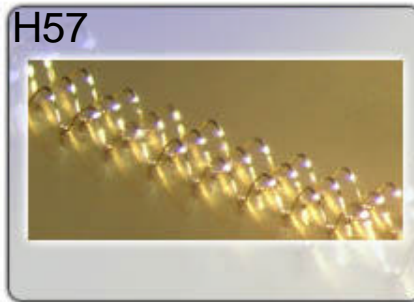
NOTE: These specifications are subject to change without prior notice.

32. Option & Accessories

H10 Zoom Stereo-Microscope Leica S6 20x
H12 Zoom Stereo-Microscope Leica MZ6 16x
H13 Zoom Stereo-Microscope Leica S4 20x
H15 HP 155-350 Hotplate, 155 x 155 mm
H21 Adjustable height heated work stage surface 100 x 100 mm
H25 Adjustable height work stage surface 60 mm diameter
H26 Adjustable height heated work stage surface 60 mm diameter
H26-TO Top-Plate für TO5 & TO8 for H26
H26-DIL Slotted Top Plate für DIL for H26
H29 Adjustable height heated work stage surface 90 mm diameter
H30 Additional Soft & Hardware for Ball/Wedge Bonding
H35 Loop Profile Software
H40 Toll Heater and Temperature Controller with LCD Display
H41 Spare Tool Heater with Thermocouple
H50 Spotlight targeting System
H51 Manual Z-Control
H55 Dual Fiber Optic Illuminator
H56 US High/Low Automatic Switch for 1 or 2 Watt
H57 1-2-2.. & 1-2-1.. Stitching capability
H60 Bonding tool Wedge
H61 Bonding tool Capillary
H65 Unplugging Probe for Bondtool
H66 Tungsten Wire for Unplugging
H70 Gold-Wire 25µ, 60 Meter, 2" Spool
H71 Motorised Wire Spool
H72 ½" Wire Spool Adapter
H73 Torque Wrench 25cNm for Bonding Tool
H74 Aluminium -Wire 25µ, 60 Meter, 2" Spool
H80 Leica ICA Videomodul fit to Mikroskop MZ6
H82 Shipping Crate
H83 Side View Video Camera (without Monitor)
H84 13" TFT Monitor
H85 Hitachi Color Video Camara
H86 External Temperature Controller for Work Stage
H87 Cross hair generator
H88 TFT 13" Monitor
H89 Video-Targeting-System

PT101 Manual Pull-Tester for testing of wire bonds
PT03 Micro-Hook for PT101 Pulltester
PT04 Workholder 60 mm Dia. for PT101
PT11 Destruct Pull Tester 2 – 15 cN
PT12 Destruct Pull Tester 3 – 30 cN
PT13 Non-destruct Pull Tester 3-7cN
5-SA Tweezers





H86



H87



H89



PT101



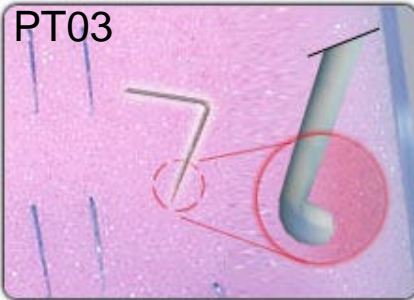
PT11 / PT12



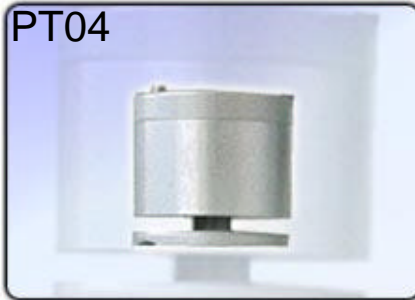
PT13



PT03



PT04



5-SA

