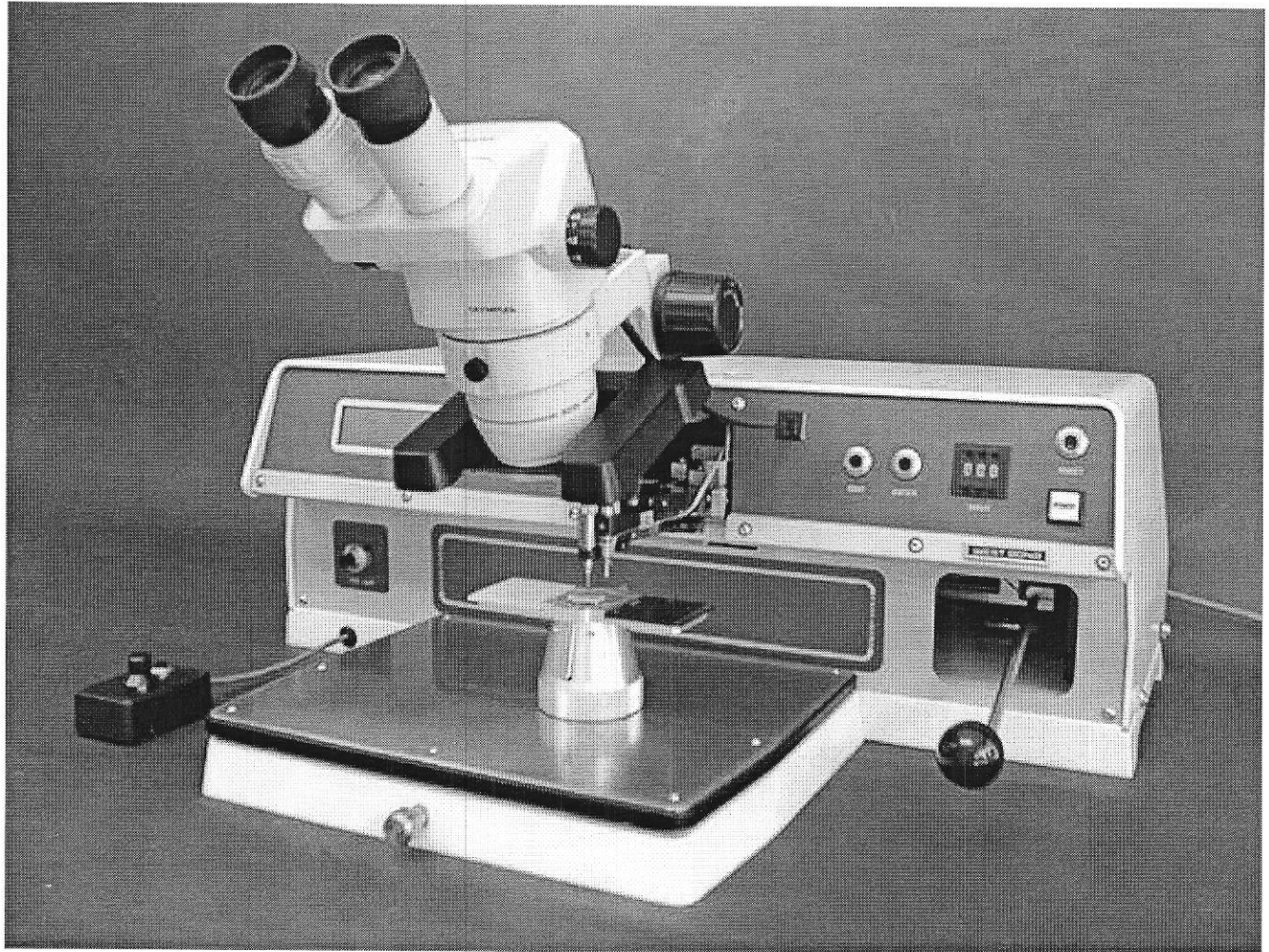


WEST·BOND® INC.



7200B / 7300B SERIES
MANUAL DIE BONDERS

Continuing a Tradition of Quality

WEST-BOND, INC.

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Specifications: Model 7300B Series, Dual Head Die Bonders, Manual X-Y-Z Last Revised 8/22/2000

Machines of 7300B Series operate to pick up and place chips and to bond them by different means of attachment. Key advantages of this series are the method of moving the two heads to and from the use position, provision to rotate chips at placement, and the convertibility of heads to accomplish the different methods. The action to exchange heads lowers each directly to the same use position at the same focal point, so allowing closest approach to deep package walls.

This mechanism and the drive motors reside on the work platform moved by West-Bond's single lever X-Y-Z Control. An optical encoder built into the Z axis tracks vertical motion with a resolution of 0.001". Its signals are read to initiate head exchange and to signal other events of the bond processes. Chip rotation is slaved directly to an optical encoder control for manual alignment under microscope view. The tool heads can not only pick and place chips, but can dispense epoxy in amounts and at elevations programmed, can pick and place preforms before die bond, can bond diode beam leads by ultrasonic energy, and can handle very delicate dice by tweezers edge grip. The tools of these heads are heated by radiant heater under steady state control, when heat is appropriate. Workpiece heat is provided by temperature controlled heated work holders specified separately.

The unique X-Y-Z manipulator moves the bonding head in all three axes of X-Y-Z. A ratio of 8:1 mechanical advantage is used. To allow the deep reach, WEST-BOND's X-Y-Z mechanism is, in essence, reversed - the pivoted pantograph is mirrored about the X axis and moved to the rear, and support of the follower has been moved to center and changed to balls on hard steel flats and vee-ways. Fore and aft weight shift of the pantograph is counterbalanced. Ball suspension of the follower is balanced by two springs, one adjustable by thumb screws, to change the elevation of tool "float". Movement in all axes is damped by a single friction point, Teflon on hard steel, to stay wherever left. Force to move is a feather-light 25 grams in each direction, with no breakaway stiction.

All machine configuration constants and bond settings are programmable at the machine panel, prompted by a series of "screens" displayed on a 4-line 40-character LCD. Ten separate buffers of machine settings hold data for different devices. All programmed values are displayed during bonding. The software is complete with all variations required for the available tool heads, and requires only configuration when heads are exchanged.

The work platform, 14.5" x 12", is a bolt-on assembly. Nominal workholder height is 2.6875 inches. However, to accommodate a variety of work pieces or different workholders, the platform surface is adjustable vertically through a range of 5/8" by a single thumb screw. The work platform is also available by optional feature, (71B), with a large rotary table to swing the pick up and bond positions alternately to the center of tool X-Y range.

Definitions of Models of this Series:

- **Model No. 7367B.** This machine with heads for mechanized tweezers pick up and placement of die, and for vacuum pick up and placement of preforms. Tweezers clamping force is set and displayed by an included load cell calibration fixture, to hold the very low values necessary to place fragile die which would be damaged by other handling means. The preform head includes the standard means to rotate preforms at placement. Mechanical scrub motion for the bond head is driven by the transfer motor, programmable in both amplitude and number of repetitions:
- Head lift motion is locked out pneumatically during scrub. Bond force is adjusted by counter weight. Tweezers assembly is Part No. 8058.

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- **Model No. 7372B.** This machine with tool heads for dispensing epoxy and for pick up and placement of dice. Die rotation and radiant heat to the tool are both included. A third head with a vacuum capillary tool for pick and place of preforms is also included. Exchange of this head for the epoxy dispense head converts this machine from epoxy to eutectic preform bonding. Mechanical scrub motion for the bond head is driven by the transfer motor, programmable in both amplitude and number of repetitions: Bonding force is adjustable by counter weight.
 - **Model No. 7374B.** This machine adapted for ultrasonic bonding, with heat, of the tab leads of beam lead diodes. The right head is used for pick up of the tabbed die with provision for rotation at placement. The left head used for bonding the tabs is equipped with K~Sine Model 46-D Ultrasonic Transducer and with radiant heat to the bond tool. Built in ultrasonic power supply is K~Sine Part No 6795, four Watts, dual channel. Settings of power and time program values are executed via an eight bit interface. Force is adjustable by force spring through a range of 10 to 175 grams. On this head of this model, force is read by a load cell and is displayed at the panel.

Features available for this Series:

- **Feature No. 71.** Rotary platform to present work piece and dice for pick up. Assembly No. 6960. This feature can be appended to any model number above.

The microscope recommended for this model is Olympus Stereo Zoom Model SZ3060 with K~Sine fluorescent shadowless illuminator. Neither microscope nor illuminator is included; however, wiring and receptacle for this illuminator are built in. Pick up tools and dispense needles are provided as appropriate to each model..

All workholders are priced separately, and should be ordered separately. A universal unheated workholder with 2 rails adjustable to grip substrates up to 1.1" in width and with dice holder P/N 1958 ring with multiple pockets, is maintained in stock and is available for delivery in the same time span as the machine. A universal heated workholder for substrates and with die presentation, Feature No 45C, is also maintained in stock Quite a large number of previously designed special workholders, both heated and unheated, are available but are not stocked, and cannot be promised for delivery with the machine. These should preferably be on an order separate from the machine order, but if not, the machine order must state that partial deliveries are allowed. Workholders for new work pieces requiring custom design and fabrication will be quoted upon receipt of drawings and samples: These must be ordered on separate purchase orders.

Requirement for and provision of a temperature controller is as stated for each model in the database Product Table.

Electrical service required is 115 VAC, 50-60 Hz, 3 Amps. For 200-240 VAC, an external step-down transformer is required and must be secured by end-user as electrical codes vary from country to country. 50 psi air pressure and shop vacuum are required for operation.

Machine size is 24" deep x 36" wide x 15" high, exclusive of microscope. Weight is 95 lb. uncrated, or 150 lb. crated.



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