

Specifications: Model 7200CR Series Dual Head Die Bond Machines, Manual X-Y-Z

Last revised: 09/19/18 - microscope

Machines of 7200CR Series provides separate functions on the same tool head to dispense epoxy, then to pick up chips, rotate them into alignment, and place them. All operation is controlled by West-Bond's unique three axis micromanipulator, working in combination with optical encoders under microprocessor control. The work piece is held on a free anvil work holder, where chips are also arrayed for pick up.

The dual tool assembly is driven directly by motor between the two positions for epoxy dispense and for vacuum pickup, with the transfer signaled by lift to a programmed elevation. Another programmed elevation is set to dispense epoxy without contact. This method is further enabled by the design of the "C Series" manipulator in which each axis is independently guided and therefore can be locked on command by pneumatic brake. Control of vacuum for pick up and placement is by work sensing firing switch, with down force adjustable from zero to approximately 75 grams. While the chip is held by vacuum, it can be rotated continuously by motor by an operator's optical encoder control.

All machine configuration constants are programmable at the machine panel, prompted by a series of "screens" displayed on a 4-line 40-character LCD. Execution is controlled by West-Bond Part No 8100 CPU containing a Motorola 68000 microprocessor and 256 KB of nonvolatile RAM. Entry of program values can be done by using for input either the encoder which reads tool position down from home, or the operator's rotation encoder. These values are displayed during bonding. To execute a manual override method, either the dispensing of epoxy or toggling of vacuum can be initiated at will by an operator's "Go" switch.

Dispense tool contains a 5/8 cc. reservoir for epoxy which may be filled through a screw cap access. Dispensing tube furnished as standard will be our P/N B-1831-1 which has a bore of 9.5 mils. An alternate dispense tube for large dots, or P/N B-1831-2 having a bore of 15.5 mils, may be substituted if specified. Pickup needle furnished as standard will be Gaiser P/N 3961-016-031-625 Delrin Series with "H" equal to .016" (hole diameter) and "T" equal to .031" (face diameter) and with OD equal to .0625" and length equal to .625", or equivalent. If any other pickup tool, either with different face dimensions or of collet style, is desired, then customer should order direct from tool manufacturer.

Definitions of Models of this Series:

- **Model No. 7200CR.** The machine described here with two tools, one tool for epoxy dispense and one tool for die pick up and placement, with die rotation capability.
- **Model No. 7201CR.** The machine described here with three tools, two tools for epoxy dispense and one tool for die pick up and placement. Includes two separate epoxy dispensers for two different dispense materials such as one for conductive and one for non-conductive epoxy, and one vacuum pick up and placement tool with die rotation capability.

Features available for this Series:

- **Feature -79: Adjustable Height Work Platform for "C" and "E" Series**
Work Platform with Adjustable Height for variable package thickness. Adjusts through a range of 0.625-in., apportioned 0.094-in. above and 0.531-in. below the nominal elevation of 2.688-in. above the fixed platform surface. Assembly No. 8557 replaces No. 8273.

- **Feature -81: Adjustable Height Work Platform for “C” and “E” Series**

The work platform is adjustable vertically by a single thumb screw through a range of 5/8 in., and with Planarity Control, adjusts thru a range of 0.625 in., 0.09375 above and 0.53125 below nominal work elevation. Planarity control of platform is by 3 point adjustment.

The microscope recommended for this model is either the Olympus SZ51- with the “Luxuray” LED illuminator #10265. Neither microscope nor illuminator is included.

Provisions are available for using ¼ cc disposable syringes for epoxy by ordering product # 11028 separately.

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. 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.

An air pressure regulating valve is provided and an indicating pressure gauge is mounted in the front panel. Air pressure required is 30 psi, and connection is to 1/4" plastic tubing. Vacuum required is nominal shop vacuum and connection is also to 1/4" tubing.

For 200-240 VAC, an external step-down transformer is required - must be secured by end-user as electrical codes vary from country to country.