

COMPLIANCE MATRIX FOR “DIE BONDER” EQUIPMENT

S.No	TECHNICAL SPECIFICATION	REMARKS
1. Main System		
1a.	Epoxy and Eutectic Attachment	
1b.	Compatible Mechanical Arm based mechanism shall be provided for both pick up & place and Collets operations	
1c.	Die Placement accuracy shall be ± 0.5 mil ($\sim 12.5\mu\text{m}$) or better	
1d.	Provision for Die rotation (360 degrees) during placement time	
1e.	Interchangeable tool head assemblies for bonding of either epoxy or eutectic methods	
1f.	Battery back-up RAM memory	
1g.	Bond force should be provided 10g to 175g or better	
1h.	XY Movement range –minimum 6” x 4” or more	
1i.	Z tool range -0.56” or more	
1j.	Z encoder resolution-0.002” or better	
1k.	All mechanism to be provided above the work plane to enable rework	
1l.	Radiant tool heat, mechanical scrub motion for the bond head with provision for programming both amplitude & no. of repetitions.	
2. Micromanipulator		
2a.	Microprocessor controlled Dual Counterbalanced single lever X-Y-Z Manipulator and 8:1 ratio	
2b.	Controls for the operation of the vacuum for the picking and placing the die/preform & Die rotation and should also controls the dispensing of the epoxy or the scrub cycle.	
3. Integrated Dispenser		
3a.	Compatible for Epoxy and Eutectic bonding	
3b.	Provision for programming the amount of epoxy to be dispensed and elevation of dispensing (Pressure/ Time dispense).	
4. Work holder		
4a.	Heated non-rotating Plate/surface of 6”x 4” or more with temperature Controller-ambient to min 400°C and Provision for heating ramp	

4b.	Provision of micrometer in order to move the axes manually and adjustable height for variable cavity packages through a range of minimum 90mm to maximum of 160mm	
4c.	Mechanical/Teflon clamping with adjustable back stop to hold Hybrid flat packages and substrates of various sizes ranging from 0.25 to 4.0 square inches and vacuum support with vacuum hole. Compatible vacuum pump for holding the work piece as well as to pick the devices	
4d.	Waffle/Gel pack holders should have included with rotating 2"x2" fluoware support and rotating die mirror presentation.	
5. Work platform		
5a.	Minimum size of 14"x 12"	
5b.	Provision for adjusting the height vertically through a range of 0.62", 0.09" above and 0.53" below in the nominal work elevation, by a single thumbscrew	
5c.	Planarity control with three-point adjustment.	
6. Microscope		
6a.	ESD Protected Stereo Zoom Microscope with fluorescent shadow less illuminator	
6b.	Zoom range-0.8x to 4.0x or better	
6c.	Magnification range 10x-60x, with eyepieces 15x or better	
6d.	Working distance minimum 100mm (Z-direction)	
6e.	Must be focused on sample stage with proper illumination system	
6f.	Field of view minimum 30mm	
6g.	Microscope mounts stay in focus with height adjustment.	
7. Camera		
7a.	Video Camera resolution >5MP or better	
7b.	Standard C-mount adapter for digital cameras	
7c.	HDMI port and/or any other port for connection to VDU system	
7d.	Frame rate-24fps or more.	
8. Video Display unit		
8a.	Size-27" with at least 1920 X 1080 resolution	
8b.	VDU shall be integrated with Microscope.	
9. Display Screen		
9a.	Prompt screens for setting the programmable machine parameters	
9b.	Set bonding parameters during bonding.	

10. Quote for Vacuum Pick up tools, Die collets and epoxy dispensers in slabs of 1-10, 11-20 and 21-30Nos. as per list below.

10a.	Teflon tips for corresponding Die sizes: a) 0.006-0.012-0.62 inch(10nos) b) 0.006-0.012-1.2 inch(10nos) c) 0.010-0.018-0.62 inch(20nos) d) 0.010-0.018-1.200 inch(20nos) e) 0.015-0.030-0.62 inch(10nos).	
10b.	Rubber tips for corresponding Die sizes: a) 0.006-0.012-0.62 inch(10nos) b)0.010-0.018-0.62 inch(10nos).	
10c.	Hand held Rubber/Teflon Pressing setup tools: a) 0.100-0.120-6 inch (10nos) b)0.150-0.180-6 inch (10nos).	
10d.	Pyramidal / 4 side Die Collets-Rubber tips for corresponding Die sizes a) 0.100-0.100-0.010-0.62 inch(5nos) b) 0.150-0.150-0.015-0.62 inch(5nos) c) 0.170-0.170-0.015-0.62 inch(5nos).	
10e.	Epoxy dispense needles to dispense epoxy to the pad size of 30 to 250 square mils required a) 0.006ID,0.012OD(2nos) b)0.012ID,0.025OD(2nos).	
11. Electrical requirements		
11a.	220V AC Typ. 50Hz Supply, single phase (Indian Standard Power Supply Cords to be given)	
11b	Protection against Electrostatic discharge for the equipment.	
12. Environment Condition		
12a.	Temperature 20°C to 40°C.	
12b	Humidity 40% to 60% non-condensing.	
13. Compatible Vacuum pump		
13	Compatible Vacuum pump for equipment to be provided and same to be considered as a part of equipment.	
14. Installation and Training		
14a.	Supplier shall depute his engineers at URSC for installation and demonstration of the equipment	
14b	Supplier should provide training to Engineers at URSC for operation and maintenance of the equipment.	