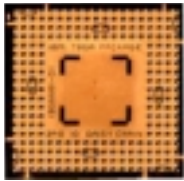


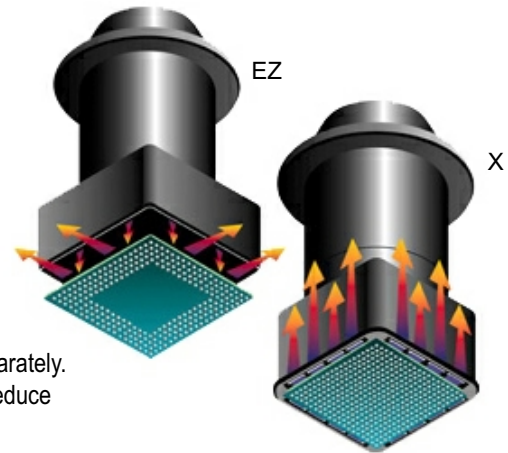


Nozzle Data Sheet for:

Tape Ball Grid Arrays

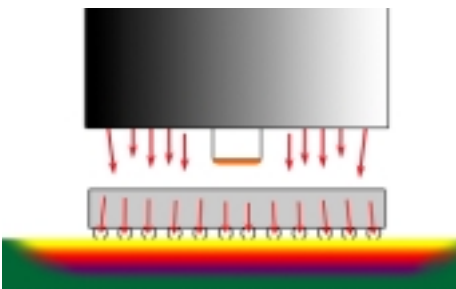


Component Identification: TBGA
 Nozzle Designation: EZ, X
 Heating Methodology: Heat Through

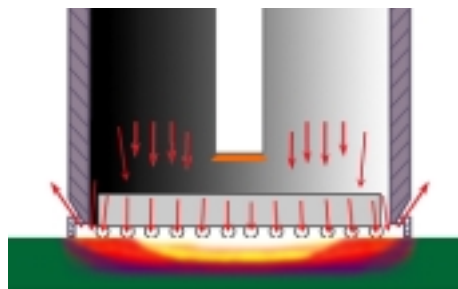


- TBGAs listed typically utilize 90/10 solder for the formation of the sphere.
- EZ nozzles require zero adjacent clearance. EZ nozzles do not include a component insertion tool as they are not package specific. Component insertion tools can be ordered separately.
- X nozzles require .100" adjacent clearance. X nozzles include a component insertion tool to reduce handling and simplify insertion of the component into the nozzle.

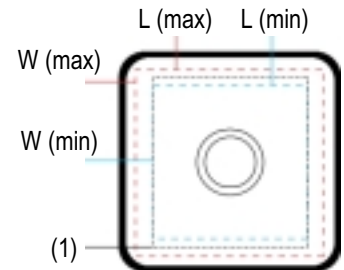
EZ Nozzle Heat Flow



X Nozzle Heat Flow



EZ Nozzle Sizing



(1) - rectangular components within min-max size.

<u>EZ Nozzle #</u>	<u>Part Size (mm)</u>	<u>X Nozzle #</u>	<u>Part Size (mm)</u>	<u>Industry Reference</u>
N17EZ17	15 sq - 17.5 sq	NA687X687	17.2 sq. x 1.71 H	TBGA-196 SGS
N21EZ21-1	19 sq - 21.5 sq	NA687X687DI	17.2 sq. x 1.1 H	TBGA-256 Altera
N25EZ25	21 sq - 25.5 sq	NA845X845D3	21.2 sq. x 1.95 H	TBGA-192 Asat/Vitesse
N31EZ31EB	27 sq - 31.5 sq	NA923X923D4	23.2 sq. x 1.65 H	TBGA-208 AMCC
N35EZ35EB	31 sq - 35.5 sq	NA1000X1000D1	25.0 sq x 1.90 H	TBGA-240 IBM
N40EZ40EB	35 sq - 40.5 sq	NA1235X1235	31.0 sq x 1.9 H	TBGA-432 IBM
		NA1397X1397D	35.2 sq. x 1.95 H	TBGA-440 Asat/Vitesse
		NA1397X1397D5	35.2 sq. x 1.2 H	TBGA-352 NEC
		NA1489X1489	37.5 sq x 1.9 H	TBGA-584 VLSI
		NA1590X1590	40.0 sq x 1.9 H	TBGA-736 IBM

Air-Vac recommends the EZ style nozzle for the highest thermal performance, balance and efficiencies.

X style nozzles are package specific.