CLAIMS

1. A dispensing system for dispensing viscous material on an electronic substrate, the dispensing system comprising:

a frame;

a support coupled to the frame, the support being configured to receive and support an electronic substrate during a dispense operation;

a dispensing unit assembly configured to dispense viscous material; and

a gantry coupled to the frame, the gantry being configured to support the dispensing unit assembly and to move the dispensing unit assembly in x-axis and y-axis directions,

wherein the dispensing unit assembly includes

a support bracket secured to the gantry,

a movable bracket rotatably coupled to the support bracket configured to enable the rotation of the movable bracket with respect to the support bracket about a first axis,

a ~~dispensing unit~~dispenser rotatably coupled to the movable bracket configured to enable the rotation of the ~~dispensing unit~~dispenser with respect to the movable bracket about a second axis generally perpendicular to the first axis, and

a mass dampener assembly coupled to the movable bracket, the mass dampener assembly being configured to reduce vibration of the ~~dispensing unit during operation~~dispenser during operation, the mass dampener assembly including a mass dampener coupled to the movable bracket by at least one isolator.

2. The dispensing system of claim 1~~, wherein the mass dampener assembly includes a mass dampener coupled to the movable bracket by at least one isolator.~~

~~3. The dispensing system of claim 2~~, wherein the mass dampener assembly further includes a mounting plate configured to mount the mass dampener to the movable bracket.

~~4.~~3. The dispensing system of claim ~~2~~1, wherein the mass dampener further includes at least one bumper configured to prevent at least one side wall of the mass dampener from engaging the movable bracket.

~~5.~~4. The dispensing system of claim 1, wherein the mass dampener assembly is approximately 25% to 50% by weight of the ~~dispensing unit~~dispenser.

~~6.~~ 5. The dispensing system of claim 1, wherein the mass dampener assembly is approximately 10% by weight of the dispensing unit assembly.

~~7.~~ 6. The dispensing system of claim 1, wherein the movable bracket is configured to rotate with respect to the support bracket up to an entire 360 degrees and the ~~dispensing unit~~dispenser is configured to rotate with respect to the movable bracket up to an entire 360 degrees.

~~8.~~ 7. The dispensing system of claim 1, wherein the gantry includes a z-axis drive mechanism coupled to the ~~dispensing unit~~dispenser to provide z-axis movement of the ~~dispensing unit~~dispenser.

~~9.~~ 8. The dispensing system of claim ~~8~~7, wherein the gantry further includes a beam configured to move in a y-axis direction, and a carriage coupled to the beam, the carriage being configured to move in an x-axis direction, the carriage including the z-axis mechanism to provide the z-axis movement of the ~~dispensing unit~~dispenser.

~~10.~~ 9. The dispensing system of claim ~~9~~8, wherein the support bracket is L-shaped in construction having a first portion coupled to the gantry and a second portion that extends perpendicularly from the first portion, the first portion of the support bracket being secured to the z-axis drive mechanism to provide the z-axis movement of the ~~dispensing unit~~dispenser.

~~11.~~ 10. The dispensing system of claim 1, further comprising a ~~vision system~~camera coupled to one of the frame and the gantry to capture at least one image of the electronic substrate.

~~12.~~ 11. The dispensing system of claim ~~11~~10, further comprising a controller configured to control dispensing unit assembly, the gantry and the ~~vision system~~camera to perform a dispense operation on the electronic substrate.

~~13.~~ 12. A method of dispensing viscous material on ~~an~~the electronic substrate, the method comprising:

providing a dispensing system of claim 1;

delivering ~~an~~the electronic substrate to a dispense position;

capturing at least one image of the electronic substrate;

analyzing the at least one image of the electronic substrate to determine a position of the electronic substrate; and

performing a dispense operation by rotating ~~a dispensing unit~~dispenser coupled to ~~a~~the support bracket by ~~a~~the movable bracket~~, the movable bracket being rotatably coupled to the support bracket and configured to enable the rotation of the movable bracket with respect to the support bracket about a first axis, the dispensing unit being rotatably coupled to the movable bracket and configured to enable the rotation of the dispensing unit with respect to the movable bracket about a second axis generally perpendicular to the first axis,~~.

~~wherein the dispensing unit includes a mass dampener assembly coupled to the movable bracket, the mass dampener assembly being configured to reduce vibration of the dispensing unit during operation.~~

~~14. The method of claim 13, wherein the mass dampener assembly includes a mass dampener coupled to the movable bracket by at least one isolator.~~

~~15. The method of claim 14~~13. The method of claim 12, wherein the mass dampener assembly further includes a mounting plate configured to mount the mass dampener to the movable bracket.

~~16.~~ 14. The method of claim ~~13~~12, wherein the mass dampener further includes at least one bumper configured to prevent at least one side wall of the mass dampener from engaging the movable bracket.

~~17.~~ 15. The method of claim ~~13~~12, wherein the mass dampener assembly is approximately 25% to 50% by weight of the ~~dispensing unit~~dispenser.

~~18.~~ 16. The method of claim ~~13~~12, wherein the mass dampener assembly is approximately 10% by weight of the dispensing unit assembly.

~~19.~~ 17. The method of claim ~~13~~12, wherein the movable bracket is configured to rotate with respect to the support bracket up to an entire 360-degrees and the ~~dispensing unit~~dispenser is configured to rotate with respect to the movable bracket up to an entire 360 degrees.

~~20.~~ 18. The method of claim ~~13~~12, further comprising moving the dispensing unit in a z-axis direction.