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 dispenser rotatably coupled to the movable bracket configured to enable the rotation of the 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 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 further includes a mounting plate configured to mount the mass dampener to the movable bracket.

3. The dispensing system of claim 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.

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

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

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 dispenser is configured to rotate with respect to the movable bracket up to an entire 360 degrees.

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

8. The dispensing system of claim 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 dispenser.

9. The dispensing system of claim 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 dispenser.

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

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

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

providing a dispensing system of claim 1;

delivering 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 dispenser coupled to the support bracket by the movable bracket.

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.

14. The method of claim 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.

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

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

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

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