5. The apparatus according to claim 4 wherein two flexure assemblies are positioned with the first end of each upper flexure parallel to the X-axis forming side flexure assemblies and two flexure assemblies are positioned with the first end of each upper flexure parallel to the Z-axis forming end flexure assemblies and wherein the side flexure assemblies are longer than the end flexure assemblies.

6. The apparatus according to ~~claims~~ claim 4 or claim 5 wherein each upper flexure is generally parallel to each lower flexure prior to elevating the upper platen.

7. The apparatus according to ~~claims~~ claim 5 or claim 6 wherein each flexure assembly comprises at least one stiffening plate on the upper flexure and at least one stiffening plate on the lower flexure leaving a first gap between the upper platen and the stiffening plate on the upper flexure and a first gap between the lower support and the stiffening plate on the lower flexure; and a second gap between the floating interconnecting member and each of the stiffening plates on the upper and lower flexures, and wherein the first gaps and the second gaps of the side flexure assemblies are smaller than the first gaps and the second gaps of the end flexure assemblies.

8. The apparatus according to any one of the preceding claims wherein the lower support comprises a lower platen and the at least one linear motion member comprises two rails mounted on the base with each rail parallel to the X-axis and a plurality of linear bearings attached to the lower platen and positioned on the rails.

9. The apparatus according to claim 8 wherein a spacer block is positioned between the lower platen and the plurality of linear bearings.

10. The apparatus according to any one of the preceding claims wherein a linear motion actuator is connected to the lower support.

11. The apparatus according to claim 10 wherein the linear motion actuator comprises a linear servo motor with a stator connected to the base and an armature connected to the lower support.

12. A method of applying a micro-contact printing stamp to a roll comprising:

supporting the micro-contact printing stamp on an upper platen having an X-axis, a Y-axis, and a Z-axis passing though a centroid of the upper platen with the X-axis and the Z-axis located within the plane of the upper platen and the Z-axis parallel to a rotation axis of the roll;

allowing translation of the upper platen along the Y-axis, rotation of the upper platen about the X-axis, and translation of the lower support along the X-axis;

providing stiffness ratios, resulting from the physical coupling chosen between the upper platen and the lower support, such that kX/kY and kZ/kY are both greater than 3 and kΦZ/kΦX and kΦY/kΦX are both greater than 3;

elevating the upper platen along the Y-axis to touch the micro-contact printing stamp to the roll; and

rotating the roll while translating the lower support along the X-axis to transfer the micro-contact printing stamp to the roll.

13. The method according to claim 12 wherein rotating the roll comprises using a drive connected to the roll.

14. The method according to ~~claims~~ claim 12 or claim 13 wherein translating the lower support comprises using a linear actuator.

15. The method according to claim 14 wherein the linear actuator comprises a linear servo motor.

16. The method according to claim 12~~1~~ wherein kX/kY and kZ/kY are both greater than 10 and kΦZ/kΦX and kΦY/kΦX are both greater than 10.

17. The method according to claim 12~~1~~ wherein kX/kY and kZ/kY are both greater than 100 and kΦY/kΦX is greater than 100.

18. The method according to claim 12~~1~~ wherein kX/kY is greater than 10,000, kZ/kY is greater than 100, and kΦY/kΦX is greater than 10,000.

19. A method of applying a micro-contact printing stamp to a roll comprising:

supporting the micro-contact printing stamp on an upper platen having an X-axis, a Y-axis, and a Z-axis passing though a centroid of the upper platen with the X-axis and the Z-axis located within the plane of the upper platen and the Z-axis parallel to a rotation axis of the roll;

allowing translation of the upper platen along the Y-axis, rotation of the upper platen about the X-axis, and translation of the lower support along the X-axis;

providing motion control, resulting from the physical coupling and mechanical actuators chosen connecting the upper platen to the lower support;

wherein the upper platen is controlled by at least one of the group consisting of translation along the X-axis using position feedback, translation along the Y-axis using force feedback, translation along the Z-axis using position feedback, rotation about the X-axis using force feedback, rotation about the Y-axis using position feedback, and rotation about the Z-axis using position feedback;

elevating the upper platen along the Y-axis to touch the micro-contact printing stamp to the roll; and

rotating the roll while translating the lower support along the X-axis to transfer the micro-contact printing stamp to the roll.

20. The method according to claim 19 wherein the upper platen is attached to the lower support by a plurality of flexures and three displacement linear actuators are attached to the upper platen; each displacement linear actuator having a position sensor and a load cell is located between the displacement linear actuator and the upper platen.

21. The method of ~~claims~~ claim 19 ~~and~~or claim 20 wherein the upper platen is controlled with rotation about the X-axis using force feedback, with rotation about the Z-axis using position feedback, and with translation along the Y-axis using force feedback.