at least three pins extending from said top of said stylus mount;

a housing to receive the insertion of said stylus mount, said housing having an open top, a continuous side and a bottom, said bottom having a center hole to allow passage of said bottom of said stylus mount and said bottom having six ball holes along a periphery of said bottom;

six balls which can conduct electrical current, said balls sized such that only a portion of the balls extend through said ball holes and into said housing, said ball holes arranged in three paired sets to arrange said balls into three sets of paired balls such that each set of said paired balls supports one of said pins of said stylus mount between said paired balls when said stylus mount is inserted into said housing;

a lower plate including contact pads for each ball, said lower plate attachable to said bottom of said housing for securing said balls between said lower plate and said bottom of said housing such that each ball is in contact with a contact pad, and said contact pads wired to said electronics; and

wherein said shank comprises: a machine attachment end, a top cap and a reversed tapered boss; wherein said body includes an open ended top;

wherein at least two screw holes are located on said body in relation to said reversed tapered boss when said reversed tapered boss is positioned inside said open ended top of said body; and further including at least three set screws screwed into said at least two screw holes such that said at least two set screws enter into said body and against said reversed tapered boss in order to secure said shank to said body.

5. A touch probe to be mounted to a computer controlled machine comprising; a body; a stylus and a shank; wherein said probe further includes an internal assembly internal to said body comprising:

electronics to provide signals to a computer of said computer controlled machine when said stylus is deflected;

a stylus mount including a top and a bottom, said bottom for receiving said stylus and said stylus mount able to conduct electrical current;

at least three pins extending from said top of said stylus mount;

a housing to receive the insertion of said stylus mount, said housing having an open top, a continuous side and a bottom, said bottom having a center hole to allow passage of said bottom of said stylus mount and said bottom having six ball holes along a periphery of said bottom;

six balls which can conduct electrical current, said balls sized such that only a portion of the balls extend through said ball holes and into said housing, said ball holes arranged in three paired sets to arrange said balls into three sets of paired balls such that each set of said paired balls supports one of said pins of said stylus mount between said paired balls when said stylus mount is inserted into said housing; and

a lower plate including contact pads for each ball, said lower plate attachable to said bottom of said housing for securing said balls between said lower plate and said bottom of said housing such that each ball is in contact with a contact pad, and said contact pads wired to said electronics.

6. The touch probe of claim **5**, wherein said housing includes a slot in said side for each pin, said slots to act as a guide for movement of said stylus mount.

7. The touch probe of claim **5**, wherein said lower plate is a circuit board.

8. The touch probe of claim **7**, further including a support ring for attaching said circuit board to said bottom of said housing.

9. The touch probe of claim **5**, further including a spring to provide a tension to force said pins against said balls.

10. The touch probe of claim **9**, further including a spring cap to force said spring towards said pins, wherein said spring cap and housing assemble together to secure said spring and stylus mount and wherein said spring cap and housing assembly are completely inside said body.

11. The touch probe of claim **10**, wherein said electronics are mounted on an upper circuit board mounted to a top of said spring cap.

12. The touch probe of claim **5**, wherein said body includes a cylinder having an open ended top and an open ended bottom, and an end cap which attaches to said bottom of said cylinder; wherein said end cap includes a hole to allow passage of said stylus; wherein said bottom of said housing includes a lip such that when said housing is inserted into said open ended bottom of said cylinder said lip does not pass into said cylinder, thereby securing in place said housing and all that is attached to said housing when said end cap is attached to said open ended bottom of said cylinder.

13. The touch probe of claim **5**, wherein said electronics includes an outside status light to indicate said stylus is deflected.

14. The touch probe of claim **5**, further including a connector receptacle for interfacing said electronics with said computer.

15. The touch probe of claim **5**, wherein said pins of said stylus mount are connected to a ground such that when said pins and balls are all in contact, said balls are grounded as seen by said electronics; and wherein any one of said pins breaks contact with a ball due to a deflection of said stylus, said electronics see the removal of that ground.

16. The touch probe of claim **15**, wherein said electronics include logic gates to determine if any of the pin-ball contacts have been broken and send a status of such to said computer.

17. A touch probe to be mounted to a computer controlled machine comprising; a body; a stylus and a shank; and wherein said probe further includes an internal assembly internal to said body comprising:

electronics to provide signals to a computer of said computer controlled machine when said stylus is deflected;

a stylus mount including a top and a bottom, said bottom for receiving said stylus and said stylus mount able to conduct electrical current;

at least three pins extending from said top of said stylus mount;

a housing to receive the insertion of said stylus mount, said housing having an open top, a continuous side and a bottom, said bottom having a center hole to allow passage of said bottom of said stylus mount and said bottom having six ball holes along a periphery of said bottom;

six balls which can conduct electrical current, said balls sized such that only a portion of the balls extend through said ball holes and into said housing, said ball