The tip ends of a plurality of probe needles may be supported on a probe card at one end. The probe needles are arranged in such a manner that they can simultaneously be brought into contact with the electrodes on the chips. A probe needle array can cover a large area and 400 to 500 probe needles may be present. It is desirable that a cleaning unit for the probe achieves to clean existing and future probe card arrays.

It is further desirable to clean these probe needles efficiently and safely. Additionally, such probe needle tips must maintain the same level. The array of probe needles should desirably be in the same level as a cleaning block when the needles are cleaned. If a probe would be cleaned irregularly, then the probe needle tips may not contact the chip properly and the test result would be influenced.

The moving range of the wafer chuck also put its restriction on how the cleaning may be performed. The available space within a wafer probing machine also restricts the cleaning. It is desirable that a cleaning system physically fit in a probe machine, such as for example the UF200 or the APM90, without interfering with adjacent mechanical components and/or control software. Consequently, there is a need to consider the shape and size of the available space in a probe machine and/or the requirements set by a probe, such as for example smoothness and level.

Additionally, it is always desirable to speed up the processing time, for example probe die yields, of a probe machine. A decrease in probe testing time is preferred, especially in existing cleaning units. For example, existing methods and/or machines call for a product wafer to be offloaded and then a cleaning wafer loaded onto the wafer chuck. Then the cleaning is performed by the probe card engaging the needles of the probe card with the cleaning wafer. Hereafter, the product wafer must be reloaded, followed by a sufficient time for the wafer to heat up to process temperature, and then the probing may resume. Increase in the needle or probe tip cleaning frequency without increasing test times is desirable.

SUMMARY

According to one embodiment a system for cleaning probe contacts may include a base plate and a cleaning plate. The base plate may include three mounting means for receiving each an adjustable attachment means, and means for connecting the base plate to a probe machine. The cleaning plate on a bottom side may include three holding means for receiving the respective adjustable attachment means, and a top area for supporting a cleaning means, wherein the holding means include openings that do not reach into a top area of the cleaning plate.

Preferably the top area is between 60-100 mm times 75-100 mm, and the adjustable attachment means allows the cleaning plate to be leveled.

According to one embodiment a method for mounting in a probe machine a system for cleaning probe contacts may be provided. The system may include a base plate comprising three mounting means for receiving each an adjustable attachment means, and means for connecting the base plate to a probe machine; and a cleaning plate on a bottom side comprising three holding means for receiving the respective adjustable attachment means, and a top area supporting a cleaning means, wherein the holding means include openings that do not reach into a top area of the cleaning plate wherein the top area is between 60-100 mm times 75-100 mm, and the adjustable attachment means allows the cleaning plate to be leveled. The first step of the method may be coupling the base plate in the probe machine. The second step of the method may be the cleaning plate to the base plate with the adjustable attachment means by mounting one of the adjustable attachment means as a reference, and mounting the two other adjustable attachment means for adjusting the level of the cleaning plate. The third step of the method may be leveling, with the aid of measuring means for measuring distance held by the probe machine, the cleaning plate by repeating the following steps until the desired level is reached: moving the measuring means to a place on the cleaning plate top area that is substantially above the adjustable attachment means used as a reference and measure a reference value with the measuring means; moving the measuring means to a place on the cleaning plate top area that is substantially above one of the two adjustable attachment means for adjusting the level and adjust that attachment means until the measuring means reads substantially the same as the reference value; and moving the measuring means to a place on the cleaning plate top area that is substantially above the other of the two adjustable attachment means for adjusting the level and adjust that attachment means until the measuring means reads substantially the same as the reference value.

At least one of the embodiments may provide a system for cleaning large probe arrays. At least one of the embodiments may provide a method for mounting in a probe machine a system for cleaning large probe arrays. Such a system and method may achieve to clean existing and future probe card arrays of a large size, for example probe cards having several hundreds of probe needles.

At least one of the embodiments may clean these probe needles efficiently and safely and/or maintain the same level when cleaning the probe contacts. Such embodiments may