Technical Data Sheet

Operation: Bump Machine

TDS-25

The motion of the basic bump machine is purely vertical. The table is guided to move in a vertical direction with four pairs of linear bearings. The table is lifted by a shaped cam and is then allowed to free fall and impact a bump programmer (rubber) pad. The programmer may be selected to meet the time duration requirements of the specification, typically either 6 ms or 11 ms.

A desired "g" level is provided by adjusting the drop height of the table. The drop height is adjusted by changing the distance relationship between the underside of the table and the top of the bump programmer. The programmers are situated on top of a structure supported by threaded rod. By adjusting the threaded rod, we may change the table's distance relationship to the bump programmers. The further apart the table is situated from the programmers, the greater the "g" level, and vice versa.

The time duration is adjusted by changing the bump programmers. A stiffer pad will shorten the pulse time and a softer pad will lengthen the pulse time. A new programmer must be re-calibrated by adjusting the drop height to give the desired acceleration at the time duration of the programmers.

The impact rate is adjusted with the speed adjustment potentiometer on the ACI controller panel. A meter is provided to indicate the impacts per second or cycles per second (cps) of the machine over the frequency range of the machine, typically 1 – 3 cps.