Consider These Factors when Choosing a Nano Positioning System by Piezo

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A precision motion control and positioning system that is based on frictionless drive and piezo actuators and flexures, is often referred to as a nano positioning system. These systems have a high utility value in various fields because they can help achieve resolution and accuracy to the sub-nanometer range. These systems have several applications, some of the most common ones being optics, image stabilization and resolution enhancement, nanometrology, biotechnology, precision machining such as boring, grinding and polishing, auto focus systems, CD and DVD mastering etc.

In short, where sub-nanometer range accuracy is called for, the use of a nano positioning system can be effectively employed. These systems are available with a myriad of features and attributes. Letâ€™s take a look at some of them:

â€¢ Movement abilities can range anywhere between single axis to 6 axes. These are available in custom as well as OEM designs

â€¢ The strength of these devices is that they are based on the principle of parallel kinematics rather than serial kinematics. With the presence of parallel metrology, users can also expect better multi-axis accuracy.

â€¢ Another important factor that allows these systems to operate with exceptional linearity and repeatability is the presence of the closed loop operation with SGS and capacitive position sensors.

â€¢ Considering that fact that thermal match is important for several operations, these systems are available in invar, titanium, steel and aluminum versions.

â€¢ An advanced nano positioning system would also comprise a digital signal processing and feed forward technology so as to allow for faster setting and higher bandwidth.

â€¢ In addition, the new age systems come equipped with mechanical design, custom software and control algorithms for highest throughput.

The heart of any good nano positioning device would an actuator, which offers precision motion control. These actuators are what provide the user with precision in the sub-nanometer range, in the first place. In addition to the range, response is important too, and these devices boast of a response time in the sub-millisecond range. This is possible because of the presence of frictionless motion based on molecular effect.

If you have been considering an investment in nano positioning systems, it is very important to also consider certain other factors. For instance, the presence of highly advanced digital servo systems, control algorithm as well as low noise drivers certainly make the system highly preferred among users. As we said earlier, flexure motion makes for decidedly superior guiding accuracy, giving you great results every time.

Another important aspect to check for would be whether your chosen nano positioning system meets the vital environmental benchmarks. If these systems are CE and RoHS compliant, they would certainly offer better performance than their other available counterparts.

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