

Application of Linear Sensor in Wire Cut machine

Wire Cut EDM machining (Electrical Discharge Machining) is an electro thermal production process in which a thin single-strand metal wire in conjunction with de-ionized water (used to conduct electricity) allows the wire to cut through metal by the use of heat from electrical sparks.

Working Principle:

Wire EDM machining (also known as "spark EDM") works by creating an electrical discharge between the wire or electrode, & the workpiece. As the spark jumps across the gap, material is removed from both the workpiece & the electrode. When the voltage between the two electrodes is increased, the intensity of the electric field in the volume between the electrodes becomes greater, causing dielectric break down of the liquid, and produces an electric arc. As a result, material is removed from the electrodes. Once the current stops (or is stopped, depending on the type of generator), new liquid dielectric is conveyed into the inter-electrode volume, enabling the solid particles (debris) to be carried away and the insulating properties of the dielectric to be restored.

As the material is being eroded, controlling the distance between the part and the tool becomes crucial in this process. If the electrode moves too close to the part, it causes the parts to touch each other causing a short-circuit that affects the part surface finish quality, but if it moves too far from the part, the material removing speed decreases.

To control the distance between the part and the tool Linear sensor is used in the wire cut machine.

