The advantages of MSE evaluation method

**Evaluation technique**

Many meter and solid paste materials were mixed with compress air in the capsule and eventually injected on material surface at high velocity. Injected directly on material surface, a new progression layer was produced, propagating to the erosion, a static scale recorded on the surface by material's volume strength of the material. It is the new type of solid particles impact test chiefly yet to verify evaluate wear properties of various materials specially hard coated thin films.

**Advantages**

1. **Quality evaluation of thin film**
   As the grinding depth of case harden part is around 10 to 30 μm, damaged degree of depth on external surface is acute. As the result, it provides in evaluation control thin film layer surface damage by laser measured.

2. **Hard coating material evaluation**
   With the probability of coating impact of solid particles, longevity can be provided and it's possibility to control amount of expected thin solid particle. With 198980μg, the wear on thickness measurement of hard coated film such as DLC is provided.

3. **Continuous measurement from material surface**
   With the probability of continuous measurement of wear depth by grinding wear and amount of part forming, evaluation control thin film layer surface damage which is up to 20μm of wear depth can be provided.

4. **High resolution capability for hard material**
   With the same measurement condition using MSE index, the wear progression degree of soft coated surface in laser measured method is acute. For example, wear on 19880μg by laser measured method is acute. But in actual condition, high resolution capability measurement 3 wear weight smaller unit of wear depth by hardcoated material can be provided.

5. **Less time measurement**
   With the use of high velocity spray particles, a little result can be obtained for example, In 1987μg of wear depth on a laser take about 1.5s, on sample surface is about 15μm. But about 15s, and on 1985μg, take about 8000μm in one time.

6. **Final evaluation in manufacturing process**
   With the use of high velocity spray particles in laser, the practical evaluation for final test that includes materials element, castellation, and manufacturable process are provided. Therefore, by laser measurement, the comparative evaluation and quality determination can be conducted.

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