surface of the holder on which is disposed each of the crystal oscillators, the mask body also having opened therein a film-forming window facing any one of the crystal oscillators. The sensor head further comprises: a first electrode fixed to that portion of the sensor head main body which is positioned right under the film-forming window; and second electrodes respectively in electrical conduction with each of the crystal oscillators, the second electrodes being disposed to protrude out of a lower surface of the holder such that, when the holder is rotated by the stepping motor to a phase in which any one of the crystal oscillators and the film-forming window coincide with each other in a vertical direction, the first electrode and the second electrode, both being made of same kind of metal, come into contact with each other for electrical conduction, wherein a lubricant supply means is disposed for supplying, before the first electrode comes into contact with the second electrode, a surface of at least one of the first electrode and the second electrode with a solid lubricant.

[0009] According to the above arrangement, in a phase in which any one of the crystal oscillators and the film-forming window coincide with each other in a vertical direction, the solid lubricant is present in a portion of contact between the first electrode and the second electrode, adhesion at this portion of contact can be restrained. Then, at the time of rotation of the holder, the second electrodes come to smoothly slide on the surface of the first electrode due to the solid lubricant. Therefore, even if the operation of rotating the holder is repeated, roughening on the surface layer portion of the first electrode can be kept as small as possible and, as a result, the sliding resistance of the second electrode relative to the first electrode will not increase during rotation of the holder. The consequence will be that the stepping motor can be restrained from getting out of step, and the magnetizing current of the stepping motor can also be restrained from increasing. As the solid lubricant, there is no limitation to the material and the particle size as long as they do not hinder the function, in addition to the

CLAIMS

[Claim 1] A sensor head for a crystal oscillator type of film thickness monitor, including:

a sensor head main body having disposed therein a stepping motor;

a holder having disposed therein a plurality of crystal oscillators in the same circumference at a distance from one another, the holder being adapted to be driven for rotation by the stepping motor;

provided that a direction from the sensor head main body toward the holder is defined as an upper side, a mask body mounted on the sensor head main body in a manner to cover an upper surface of the holder on which is disposed each of the crystal oscillators, the mask body also having opened therein a film-forming window facing any one of the crystal oscillators, the sensor head further comprising:

a first electrode fixed to that portion of the sensor head main body which is positioned right under the film-forming window; and second electrodes respectively in electrical conduction with each of the crystal oscillators, the second electrodes being disposed to protrude out of a lower surface of the holder such that, when the holder is rotated by the stepping motor to a phase in which any one of the crystal oscillators and the film-forming window coincide with each other in a vertical direction, the first electrode and the second electrode, both being made of same kind of metal, come into contact with each other for electrical conduction,

wherein a lubricant supply means is disposed for supplying, before the first electrode comes into contact with the second electrode, a surface of at least one of the first electrode and the second electrode with a solid lubricant.

[Claim 2] The sensor head for a crystal oscillator type of film thickness monitor according to claim 1,

wherein the lubricant supply means is disposed adjacent to one of the