CLAIMS

1. A method for manufacturing a magnetic-disk glass substrate comprising grinding processing for using a lubricant and a pair of an upper surface plate and a lower surface plate having a grinding surface provided with fixed abrasive particles including diamond particles, and sandwiching and grinding both main surfaces of the glass substrate with the pair of upper and lower surface plates while supplying the lubricant between the grinding surfaces and the glass substrate,

wherein the glass substrate is obtained by cutting a sheet of plate glass manufactured by a float method into a predetermined shape, and one main surface side has a surface portion containing tin in a larger amount than that of the other main surface side,

the grinding processing is performed such that the upper surface plate side and the lower surface plate side are different in a processing speed, and

the main surface of the glass substrate having the surface portion containing tin in a large amount is set on the surface plate side with the lower processing speed and ground.

2. The method for manufacturing a magnetic-disk glass substrate according to claim 1,

wherein the substrate after being ground has a flatness of 2.5 μm or less.

3. The method for manufacturing a magnetic-disk glass substrate according to claim 1 or 2,

wherein grinding is performed such that a difference in surface roughness between both of the main surfaces of the ground substrate is 0.01 μm or less in Ra.

4. The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 3,

wherein both of the main surfaces of the ground substrate have a roughness of 0.130 μm or less in Ra.

5. The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 4,

wherein, when simultaneously grinding a plurality of glass substrates, the main surfaces having the surface portion containing tin in a large amount are all set so as to face in the same direction.

6. The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 5,

wherein an amount of projection of the fixed abrasive particles on the surface plate side with the relatively higher processing speed is relatively greater compared with the surface plate side with the lower processing speed.

7. The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 6,

wherein the grinding processing includes a first stage in which the main surfaces of the glass substrate are roughened with a higher load than a load applied in grinding and a second stage, after the first stage, in which the surface of the glass substrate is ground with a lower load than the load applied in the first stage.

8. The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 7,

wherein a processing speed in the grinding processing is 3.0 to 9.0 μm/minute.

9. A method for manufacturing a magnetic disk comprising forming at least a magnetic recording layer on the magnetic-disk glass substrate manufactured by the method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 8.

[Claim 1]

A method for manufacturing a magnetic-disk glass substrate comprising grinding processing for using a lubricant and a pair of an upper surface plate and a lower surface plate having a grinding surface provided with fixed abrasive particles including diamond particles, and sandwiching and grinding both main surfaces of the glass substrate with the pair of upper and lower surface plates while supplying the lubricant between the grinding surfaces and the glass substrate,

wherein the glass substrate is obtained by cutting a sheet of plate glass manufactured by a float method into a predetermined shape, and one main surface side has a surface portion containing tin in a larger amount than that of the other main surface side,

the grinding processing is performed such that the upper surface plate side and the lower surface plate side are different in a processing speed, and

the main surface of the glass substrate having the surface portion containing tin in a large amount is set on the surface plate side with the lower processing speed and ground.

[Claim 2]

The method for manufacturing a magnetic-disk glass substrate according to claim 1, wherein the substrate after being ground has a flatness of 2.5 μm or less.

[Claim 3]

The method for manufacturing a magnetic-disk glass substrate according to claim 1 or 2, wherein grinding is performed such that a difference in surface roughness between both of the main surfaces of the ground substrate is 0.01 μm or less in Ra.

[Claim 4]

The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 3, wherein both of the main surfaces of the ground substrate have a roughness of 0.130 μm or less in Ra.

[Claim 5]

The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 4, wherein, when simultaneously grinding a plurality of glass substrates, the main surfaces having the surface portion containing tin in a large amount are all set so as to face in the same direction.

[Claim 6]

The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 5, wherein an amount of projection of the fixed abrasive particles on the surface plate side with the relatively higher processing speed is relatively greater compared with the surface plate side with the lower processing speed.

[Claim 7]

The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 6, wherein the grinding processing includes a first stage in which the main surfaces of the glass substrate are roughened with a higher load than a load applied in grinding and a second stage, after the first stage, in which the surface of the glass substrate is ground with a lower load than the load applied in the first stage.

[Claim 8]

The method for manufacturing a magnetic-disk glass substrate according to any of claims 1 to 7, wherein a processing speed in the grinding processing is 3.0 to 9.0 μm/minute.