

The third bonding method consists in ~~temporarily~~ ^{temporarily} retaining the magnetic head chips T1 set on the base member B1 by magnetic head chip retention units 65 and finely adjusting the positions of the magnetic head chips T1 by an operator. The magnetic head chips are bonded in the thus adjusted positions, as shown in Fig.7.

First, the operator sets the magnetic head chips T1 as with pincers on the base member B1 and presses the magnetic head chip retention units 65 against the upper surfaces of the magnetic head chips T1 for provisionally holding the magnetic head chips T1. The operator then holds metal rods 66 having pointed ends with both hands and, holding both sides of the magnetic head chips T1 therewith, shifts the magnetic head tips T1 to a pre-set position. After completion of positioning of the magnetic head chips T1, the operator applies the instantaneous adhesive to and around the magnetic head chips T1 for securing the magnetic head chips. After curing the instantaneous adhesive, the operator releases the magnetic head chip retention units 65 from the magnetic head chips T1 to complete the bonding of the magnetic head chips T1.

This method requires skill on the part of the operator since the magnetic head chips T1 need to be moved manually a distance of the order of several microns.

With the conventional method for bonding the magnetic head chips, it is difficult to achieve correct positioning and

adjustment, thus producing defects in track height or azimuth, while the skill on the part of the operator is occasionally required.

OBJECT AND SUMMARY OF THE INVENTION

It is therefore a principal object of the present invention to provide a magnetic head chip bonding device whereby each magnetic head chip may be accurately positioned and bonded without requiring operational skill.

~~In one aspect, the present invention provides a magnetic head chip bonding device for bonding a magnetic head chip to a base member having a magnetic head chip retention unit for applying the pressure to the magnetic head chip for pressing the magnetic head chip against the base member, a magnetic head chip holding unit for holding the magnetic head chip, a magnetic chip head detection unit for detecting the position of the magnetic head chip and a magnetic head chip shifting unit for shifting the magnetic head chip and the magnetic head chip holding unit responsive to an output of the magnetic head chip position detection unit.~~

new claim

~~In another aspect, the present invention provides a method for bonding a magnetic head chip to a base member comprising a first step of applying a weak pressure against the magnetic head chip for pressing the magnetic head chip against the base member, a second step of supporting and shifting the magnetic head chip for positioning, and a third step of retaining the magnetic head~~

new
claim 5

~~chip after the end of the second step, and a fourth step of coating an adhesive to an area between the base member and the magnetic head chip.~~

The pressure exerted by the magnetic head chip retention unit on the magnetic head chip is preferably variable, and the magnetic head chip holding unit preferably is made up of a pair of supporting members clamping the magnetic head chip in-between.

The magnetic head chip shifting unit preferably shifts the magnetic head chip and the magnetic head chip holding unit by linear movement along three axes perpendicular to one another and by rotation about a selected one of the three axes.

Since the magnetic head chip is thrust against the base member by the magnetic head chip retention unit, the magnetic head chip and the base member are satisfactorily bonded to each other to prevent azimuth defects. Since the magnetic head chip shifting unit is provided for shifting the magnetic head chip and the magnetic head chip holding unit responsive to the output of the magnetic head chip position detecting unit, the magnetic head unit can be positioned without requiring operational skill.

Also the magnetic head chip can be provisionally retained or secured by the variable pressure exerted by the magnetic head retention unit on the magnetic head chip. Thus, by retaining the magnetic head chip with a weaker pressure for positioning, the magnetic head chip can be provisionally retained and subsequently positioned. After the end of positioning, the magnetic head chip

WHAT IS CLAIMED IS:

1. A magnetic head chip bonding device for bonding a magnetic head chip to a base member comprising

a magnetic head chip retention unit for applying ~~the~~ pressure to the magnetic head chip for applying the magnetic head chip against the base member,

a magnetic head chip holding unit for holding the magnetic head chip, a magnetic chip head detection unit for detecting the position of the magnetic head chip, and

a magnetic head chip shifting unit for shifting the magnetic head chip ~~holding unit, and consequently shifting the~~ head chip and the magnetic head chip ~~holding unit~~ responsive to an output of the magnetic head chip position detection unit.

2. The magnetic head chip bonding device as claimed in claim 1, wherein the force of pressure of the magnetic head chip retention unit onto the magnetic head chip is variable.

3. The magnetic head chip bonding device as claimed in claim 1, wherein the magnetic head chip holding unit comprises a pair of supporting members for clamping the magnetic head chip in-between.

4. The magnetic head chip bonding device as claimed in claim 1, wherein the movement of the magnetic head chip and the magnetic head chip holding unit by the magnetic head chip shifting unit is movement along three axes perpendicular to one another and rotation about a selected one of said three axes as the center of rotation.

5. A method for bonding a magnetic head chip to a base member comprising

a first step of applying a ~~weak~~ pressure against the magnetic head chip for pressing the magnetic head chip against the base member, *said pressure being sufficiently weak to facilitate repositioning of the magnetic head chip with respect to the base member.*

a second step of supporting and shifting the magnetic head chip for positioning, and

a third step of retaining said magnetic head chip against the base member after the end of said second step, and

a fourth step of ~~coating an adhesive to an area between the~~ *applying to bond the magnetic head chip to the* ~~base member and the magnetic head chip.~~ *around* ~~base member.~~

6. The method for bonding a magnetic head chip to a base member as claimed in claim 5, wherein said second step has a step of shifting the magnetic head chip along two mutually perpendicular axes and a step of rotating the magnetic head chip about a third axis perpendicular to said two axes.

7. The method for bonding a magnetic head chip to a base member as claimed in claim 5, wherein said third step has a step of setting a height-wise position of said magnetic head chip.