

ABSTRACT OF THE DISCLOSURE

TITLE OF INVENTION: PIVOT THRUST BEARING SYSTEM

To stabilize a mixed lubricating condition in a pivot thrust bearing, a rotary shaft is made of steel material by directly applying a double ion implantation of metal element and carbon. An ion-implantation surface of this rotary shaft is brought into slidable contact with a bearing through a lubricating oil component. Especially, the metal element directly implanted into the rotary shaft is titanium (Ti), and an implantation amount of the titanium (Ti) is not smaller than 2.5×10^{17} dose (ions/cm²), while an implantation amount of the carbon is equivalent to or larger than the implantation amount of the titanium (Ti). Furthermore, the steel material constituting the rotary shaft has Vickers hardness not smaller than Hv500, and a sliding portion of the bearing is made of metal or ceramic having Vickers hardness not smaller than Hv550.

Figures 3 and 4.

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