The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. Suggested title “a manipulator used to drive a surgical device that treats a body tissue ”.

**Regarding claim 1**. A control apparatus of rotating electrical machine including  
a rotor including a field winding and a stator including a polyphase armature winding, the control apparatus comprising: a field current control unit configured to control a field current applied to the field winding; a rotor position detecting unit configured to detect an angular position of the rotor; and an armature current control unit configured to control an armature current applied to the armature winding on a basis of the angular position of the rotor detected by the rotor position detecting unit, wherein the rotor position detecting unit comprises:  
an induced voltage detecting unit configured to detect induced voltages generated at respective phases of the armature winding while the field current applied to the field winding by the field current control unit rises toward a target value; and  
a rotor position judging unit configured to detect the angular position of the rotor on a basis of the induced voltages detected by the induced voltage detecting unit.   
   
**Regarding claim 2**. The control apparatus of rotating electrical machine according to claim 1,  
wherein the rotor position judging unit detects the angular position of the rotor on a basis of amplitude ratios and polarities of the induced voltages generated at the respective phases of the armature winding.   
   
**Regarding claim 3**. The control apparatus of rotating electrical machine according to claim 1,  
wherein the rotor position judging unit detects the angular position of the rotor on a basis of magnitude relationship and polarities of the induced voltages generated at the respective phases of the armature winding.   
   
**Regarding claim 4**. The control apparatus of rotating electrical machine according to claim 3,  
wherein the armature winding has six or more phases, and the rotor position judging unit has two or more thresholds for judging the magnitude relationship and the polarities of the induced voltages generated at the respective phases of the armature winding.   
   
**Regarding claim 5**. The control apparatus of rotating electrical machine according to claim 3,  
wherein the armature current control unit advances or delays a phase of the armature current in a direction reducing an induced voltage of an intermediate phase among the magnitude relationship of the induced voltages generated at the respective phases of the armature winding.   
   
**Regarding claim 6**. The control apparatus of rotating electrical machine according to claim 1,  
wherein, when a direction of a magnetic flux generated by a field pole of the rotor is defined as a d-axis, and a direction electrically orthogonal to the d-axis is defined as a q-axis, the armature current control unit divides the armature current to be applied to the armature winding into a current component in a direction of the d-axis and a current component in a direction of the q-axis, and applies the current component in the direction of the d-axis to the armature winding in a direction in which a field magnetic flux generated by the field current is cancelled out while the field current to be applied to the field winding by the field current control unit rises toward the target value.   
   
**Regarding claim 7**. A control method of rotating electrical machine including a rotor including a field winding and a stator including a polyphase armature winding, the control method comprising:  
a field current control step of controlling a field current applied to the field winding; a rotor position detection step of detecting an angular position of the rotor; and an armature current control step of controlling an armature current applied to the armature winding on a basis of the detected angular position of the rotor, wherein the rotor position detection step comprising:  
an induced voltage detection step of detecting induced voltages generated at respective phases of the armature winding while the field current applied to the field winding by the field current control step rises toward a target value; and  
a rotor position judging step of detecting the angular position of the rotor on a basis of the detected induced voltages.