

ABSTRACT

VACUUM PUMP, VACUUM PUMP BEARING PROTECTION STRUCTURE, AND
VACUUM PUMP ROTATING BODY

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A vacuum pump is provided that can reduce kinetic energy of a rotating body acting on a touchdown bearing when a magnetic bearing is uncontrollable. A vacuum pump includes a rotating body including a rotor blade; a rotor shaft disposed in a center of the rotating body; a magnetic bearing configured to levitate and support the rotor shaft; a
10 touchdown bearing that is separated, by a gap, from the rotor shaft and configured to support the rotor shaft when the magnetic bearing is uncontrollable; and a bearing protection structure configured to protect the touchdown bearing. The bearing protection structure includes a protrusion disposed on at least one of the rotating body and a component around the rotating
body. Upon a touchdown of the rotor shaft on the touchdown bearing, the rotating body
15 comes into contact with the component around the rotating body through the protrusion so that kinetic energy of the rotating body acting on the touchdown bearing is reduced.

Figure 9