

CLAIMS

1. A workpiece holding apparatus, comprising:
 - a rigid body having a vent;
 - a suction pad adhered onto the lower end face of the rigid body and having an opening communicating with the vent, being configured to suck and hold a workpiece;
 - an air controlling mechanism communicating with the vent, being configured to aspirate or discharge air through the vent to aspirate or discharge air from the opening; and
 - a swelling portion being configured to be supplied with air by the air controlling mechanism through the vent to swell out at least a part of an area of the suction pad to be in contact with the workpiece toward the workpiece in detaching the workpiece from the suction pad; wherein
 - the suction pad is configured to suck and hold the workpiece by bringing the opening into contact with the workpiece while aspirating air by the air controlling mechanism to aspirate air through the opening, and is configured to detach the workpiece from the suction pad by discharging air from the air controlling mechanism to discharge air through the opening.
2. The workpiece holding apparatus according to claim 1, wherein the swelling portion is composed of a concave part formed on a lower end portion of the rigid body, the suction pad, and a space defined by the both; and the space is configured to be supplied with air and pressurized by the air controlling mechanism to swell out the suction pad toward the workpiece.

3. The workpiece holding apparatus according to claim 2, wherein the swelling portion is provided with a pressurizing member in the space thereof, the pressurizing member being configured to be pressurized by air discharged from the air controlling mechanism to pressurize the suction pad to swell out the suction pad.

4. The workpiece holding apparatus according to any one of claims 1 to 3, wherein the swelling portion is located at a position other than the opening in the area of the suction pad to be in contact with the workpiece.

CLAIMS

1. A workpiece holding apparatus, comprising:

a rigid body having a vent;

a suction pad adhered onto the lower end face of the rigid body and having an opening communicating with the vent, being configured to suck and hold a workpiece;

an air controlling mechanism communicating with the vent, being configured to aspirate or discharge air through the vent to aspirate or discharge air from the opening; and

a swelling portion being configured to be supplied with air by the air controlling mechanism through the vent to swell out at least a part of an area of the suction pad to be in contact with the workpiece toward the workpiece in detaching the workpiece from the suction pad; wherein

the suction pad is configured to suck and hold the workpiece by bringing the opening into contact with the workpiece while aspirating air by the air controlling mechanism to aspirate air through the opening, and is configured to detach the workpiece from the suction pad by discharging air from the air controlling mechanism to discharge air through the opening,

wherein the swelling portion is composed of a concave part formed on a lower end portion of the rigid body, the suction pad, and a space defined by the both; and the space is configured to be supplied with air and pressurized by the air controlling mechanism to swell out the suction pad toward the workpiece,

and wherein the swelling portion is provided with a pressurizing member in the space thereof, the

pressurizing member being configured to be pressurized by air discharged from the air controlling mechanism to pressurize the suction pad to swell out the suction pad.

2. The workpiece holding apparatus according to claim 1, wherein the swelling portion is located at a position other than the opening in the area of the suction pad to be in contact with the workpiece.