

ABSTRACT

The oil-free screw compressor 10 includes: a screw rotor 14 including a screw 14a and a shaft 14c; a bearing 26; a first shaft seal device 30 disposed between the screw and the bearing, the first shaft seal device including: a first seal 38a and a first communication section 30a configured to communicate the bearing side with respect to between the shaft and the first seal, and an outer peripheral face of the first shaft seal device; a second shaft seal device 32 disposed between the first shaft seal device and the bearing, the second shaft seal device including: a second seal 32a and a second communication section 32c configured to communicate the screw side with respect to between the shaft and the second seal, and an outer peripheral face of the second shaft seal device; and a first seal member 50 including a seal between the first communication section and the second communication section. The casing 12 includes an atmosphere communication section 12m configured to communicate the first communication section and the second communication section with an atmosphere. A sectional area in the first communication section is larger than a sectional area between the seal of the first seal member and the shaft.