Movement of Clamp and Operating Principle

(Example of O.D. Clamping)

1. Air is sent to rear chambers A and B.
2. The piston moves to the right side in the above figure while pushing and inflating the actuator (a workpiece can be inserted by sending higher air pressure than the jaw finishing pressure).
3. The workpiece is inserted.
4. By releasing the air form rear chambers A and B, the actuator clamps the workpiece with its membrane still inflated due to the previously applied jaw finishing pressure. The actuator's clamping force depends on the amount of membrane inflation.
5. In order to ensure the sufficient clamping force, a counter balance, a back pressure (reduction force), and a lead-in (increased force) mechanism are incorporated.

For outer-diameter clamping

By increasing the number of revolutions, the mass of a jaw changes into a centrifugal force, thus working in the direction of weakening a clamping force. Then, by placing a weight on the back side of the actuator, this generates a force in the direction of eliminating a centrifugal force of a jaw.