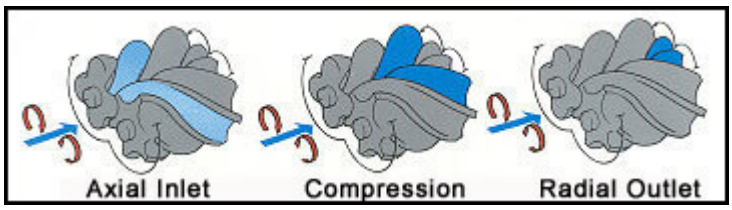
Twin-Screw Operating Principles



Inlet Phase - The male and female rotor's rotate counter to each other. As the lobes of each rotor travel past each inlet port, air is trapped between consecutive lobes and the cylindrical casing. The air moves axially (forward) throughout the case towards the discharge port.

Compression Phase - Once each trailing lobe seals its cell, the air charge is swept around the casing until the leading lobe uncovers the discharge port. At the same time, the male and female lobes will intermesh in such a way so that the volume formed between them, and the apex where the twin cylindrical walls meet, is progressively reduced in an axial direction from the inlet port end to the opposite discharge port end.

Discharge Phase - Once equalization of pressure between the existing charge in the manifold and the charge being moved into the discharge port occurs, then any further rotation of the rotors displaces the charge positively into the manifold until the volume between the intermeshing rotors and casing walls in the discharge port region are reduced to ambient pressure again.