

A REVOLVING VANE COMPRESSOR AND METHOD OF OPERATING AND MANUFACTURING THE SAME

ABSTRACT

A revolving vane compressor and method of operating and manufacturing the same are disclosed. The compressor includes a rotor, a sleeve, a primary vane, at least one secondary vane and a stationary flow regulator. The rotor has a first rotational axis. The sleeve is configured to surround the rotor along a direction parallel to the first rotational axis. The sleeve having a second rotational axis parallel to and offset from the first rotational axis such that a channel is formed between the sleeve and the rotor. The sleeve further has open first and second ends. The primary vane has one end in swivel engagement with the sleeve and the other end in sliding engagement with the rotor such that the rotor is operable to drive the sleeve, and vice versa. The primary vane and the at least one secondary vane partition the channel into a plurality of chambers. The stationary flow regulator is configured to abut the open first end of the sleeve. The flow regulator is shaped such that, in a first rotational position of the sleeve relative to the flow regulator, one of the plurality of chambers is in fluid communication with a compressor inlet for drawing a compressible fluid into said chamber, and in a second rotational position of the sleeve relative to the flow regulator, the flow regulator seals said chamber for compressing the fluid within said chamber.

FIG. 2