

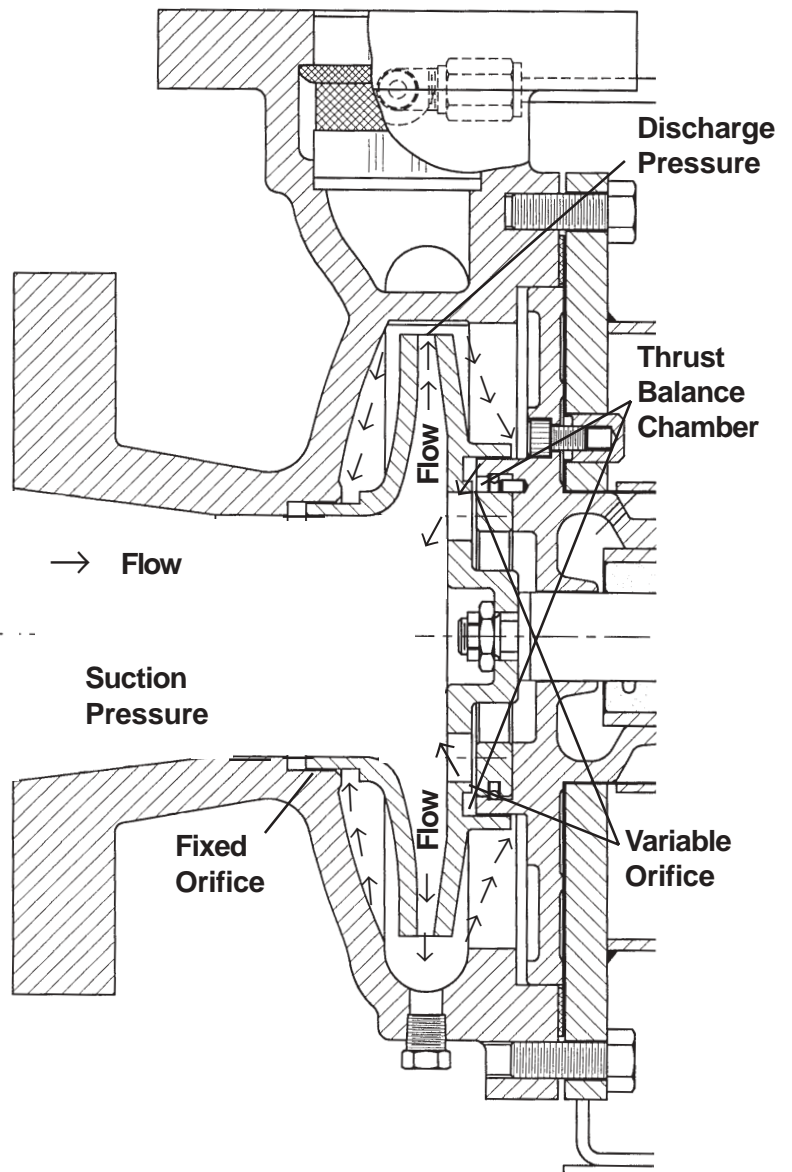
ENGINEERING DATA SHEET

<i>Hydraulic Thrust Balance (Single Ring)</i>		
Date	Supersedes	No.
04/01/99	06/25/93	18E

The diagram illustrates the axial hydraulic thrust balance for Chempumps having a single ring thrust balance system. This design utilizes two fixed orifices to restrict flow and create a pressure drop across the impeller. The fixed orifice on the motor side of the impeller is larger in diameter than the fixed orifice on the suction side of the impeller. This creates a thrust toward the motor. The variable orifice on the motor side of the impeller regulates flow and pressure in the thrust balance chamber.

In operation, the impeller thrusts toward the motor because of the difference in areas outside the two fixed orifices. As the impeller moves toward the motor, the variable orifice (created by the axial movement of the impeller) clearance decreases and builds pressure in the thrust balance chamber. This added pressure build up prevents the impeller from making physical contact with thrust surface located on the front bearing housing even under conditions of maximum axial thrust.

Thrust surfaces and/or trust washers are designed to minimize damage in the event of dry running, or process upsets which can cause axial contact of the rotary element.



Single Ring Thrust Balance