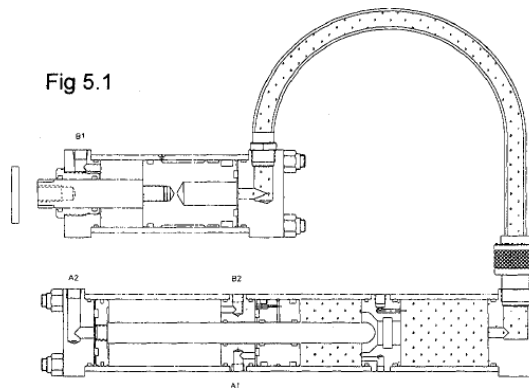


## 5.0 Functional Description

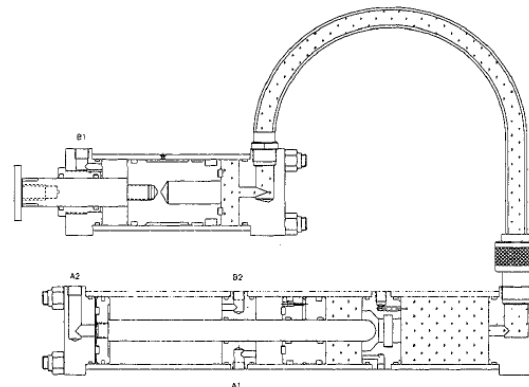
### 5.1 HPS Series

Note: During the Approach and Retract stroke, air must be directed to port "B2". Failure to do so may cause the high pressure rod to extend into the valve block therefore stopping the cylinder work rod.

1. *Cylinder Retracted* - In this view air is directed to Ports B1 and B2 fully retracting the Reservoir, Working, and High Pressure Pistons.



2. *Approach Stroke* - Air is directed to Port A1. The Reservoir piston advances, displacing the reservoir oil through the valve block to the back of the working piston, advancing the cylinder rod (at low force) until meeting resistance (work surface or part contact).



3. *Power Stroke* - Regulated air pressure is applied to Port A2. The high pressure piston and rod advance contacting the valve block seal and isolating the reservoir oil from the working section. Continued movement of the high pressure rod and piston assembly intensifies and displaces the trapped oil developing the power stroke. Step 1 returns all three pistons and oil to the retracted position.

