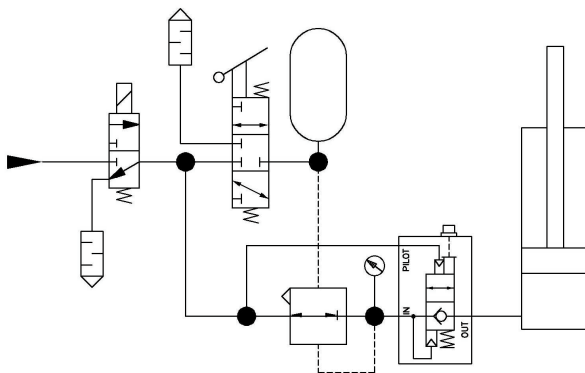
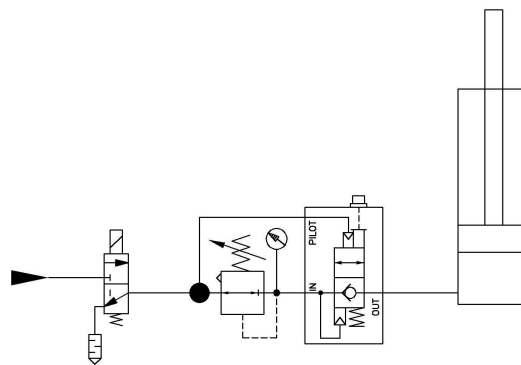


## Equa-Check on a Load Balancer

An Equa-Check valve is an air piloted check valve with the potential for equal internal balancing between the IN pressure and Pilot pressure. The internal pressure balancing between the in the Equa-Check valves enables it to perform some unique controlling functions in pneumatic applications. Pneumatic load balancing systems are one type of application that can benefit from the function of an Equa-Check valve.

In pneumatic load balancing applications, two way flow needs to be maintained in the line between the cylinder and pressure regulator during normal operation, but checked during equipment shutdown or when air pressure is lost. An Equa-Check can be used to maintain two way air flow during normal operation and checked flow when the air supply is lost. The Equa-Check would check the flow from the cylinder when equipment supply pressure drops close to the regulated pressure to the load balancing cylinder.

The circuit to the right illustrates an example of a system used to control a cylinder used to balance a load. The relieving regulator is manually adjusted to regulate a pressure that allows the cylinder to generate enough force to balance the load and keep it in position. If weight is taken off or added, the spring force on the regulator is adjusted to rebalance the load.



adjusted to rebalance the load.

The circuit to the left illustrates a second example of a system used to control a cylinder balancing a load. In this case the relieving regulator is adjusted by changing the pilot pressure to the regulator. The regulated pressure is set high enough to allow the cylinder to generate enough force to balance the load and keep it in position. If weight is taken off or added, the pilot pressure to the regulator is



## Equa-Check on a Load Balancer

For the example systems, the load position is changed by pushing up or down on the load. Lifting the load decreases the cylinder pressure, which causes the regulator to add air to the cylinder. A new higher position is assumed and maintained when the regulated pressure is reestablished. If the load is pushed down, the relieving regulator releases pressure. A new lower position is assumed and maintained when the regulated pressure is reestablished.

While air pressure is being supplied to the regulator, the Equa-Check valve allows two way air flow between the cylinder and the regulator. However; when the air pressure supply drops close to the pressure provided to the cylinder (typically around 5 PSI of the balancer pressure) the Equa-Check valve will close and hold the load in position. When there is low or no air supply, the load would be lowered by pressing the manual release on the Equa-Check valve.

In the example systems, the downward movement of the load would be stopped if the supply air pressure drops to within 5 PSI of the regulated pressure. This circuit can be used to assure load control when equipment is stopped by either shutoff or a loss of air pressure. When air pressure is not available, the manual override on the Equa-Check valve would be used to control lowering of the load.

Load balancers are used in a wide variety of applications involving assembly equipment, manual spot welding, saw positioning systems, material handling, and equipment lifting. Specific circuit design and switching valve selection is application dependant. Your ALADCO distributor or ALADCO can be contacted to provide assistance with answering application questions.