



How does miniBOOSTER work?

▲ High performance intensification

miniBOOSTER's are oscillating boosters. They automatically intensify system pressure giving a higher outlet pressure and will compensate for oil loss on the high pressure side. This function of the miniBOOSTER is based on the patented system as shown above.

The basic design incorporates a low-pressure piston (LP), a high-pressure piston (HP) and a bistable reversing valve (BV1). The dump valve (DV) is an optional feature.

Hydraulic fluid at system pressure is supplied to port IN. It flows freely through check valves KV1, KV2 and DV (if included) via port H. At this point all flow goes through the booster, and a cylinder on the high pressure side H will move fast forward. As the cylinder meets resistance pressure increases in the high pressure side H equal to the pump supply pressure. This causes check valves KV1 and DV to close and the oil is directed to Vol 1. The bistable valve BV1 connects Vol 2 to tank via Vol 3. As pump pressure is applied to Vol 1 the pistons move down.

When the piston has fully moved down, Pilot Supply 1 is energized operating the bistable valve BV1 changing its position. Fluid is led to Vol 2 moving the pistons upward delivering fluid at higher pressure. The resultant pressure is determined by the ratio in area of the low pressure piston LP to the high pressure piston HP.

Once the high pressure piston HP has moved up, Pilot Supply 1 is connected to tank, the bistable valve BV1 returns to its original position and the cycle is repeated until the required end pressure has been established. At that point the intensifier stops and will only start again to maintain the pressure at the high pressure side of H.

Pressure can be relieved from the high pressure side through the pilot operated check valve DV (if included). By connecting port R to the supply pressure and port IN to tank, Pilot Supply 3 will be pressurized, allowing the fluid from the high pressure side H to flow back to tank.

