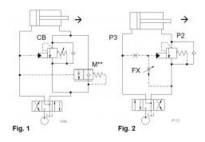


CBV Circuit Performance Improvement

Machine: | Actuator: Cylinder | Function: Counterbalance

Prepared for :	Prepared by :	

Schematics



Related Products

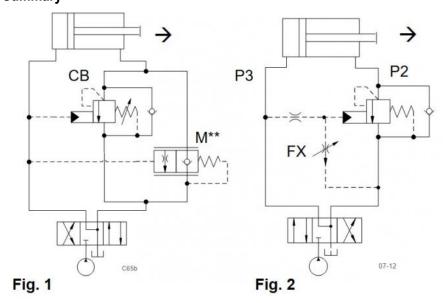
Cartridges

CBAB - 1.5:1 pilot ratio, ultra-restrictive counterbalance valve

FXAA - Fixed-orifice, pressure compensated flow control valve

MBIM - Balanced, load control valve

Summary



The following circuits show valve combinations that improve the control and stability of overrunning loads by opening an additional flow path to reduce pressure losses when the cylinder is moved against a positive load.

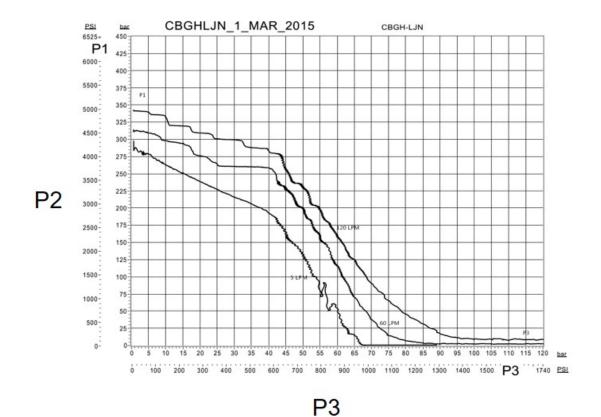
Standard counterbalance: CB**

 Load-insensitive counterbalance: M**M-XM*
 Pressure-compensated flow control: FX*A

Benefits of this circuit arrangement:

- Fig.1 shows a load-insensitive counterbalance valve (M- valve) in parallel with a standard CBV. The M-valve
 opens at an inlet pressure of 500 psi when the load is no longer negative / over-running, without causing
 instability.
- Fig.2 shows a standard counterbalance valve with an orifice and a pressure-compensated flow control in the
 pilot line. At low pressure differentials (P3-P2), the pilot flow is low and the compensator of the flow control
 valve is still inactive. At a higher pressure differential, the flow control becomes active, resulting in a lower
 pressure drop across the orifice. In this way the effective pilot ratio of the counterbalance valve is reduced
 for low pilot pressure P3 only, as can be seen in the diagram.

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For Sun technical support, contact Steve Weber.

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