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PUMP Brief

Hydraulic Pump Division

AS-0023

Gold Cup Solution Series: Part 9

Constant Speed (Load Sensing)

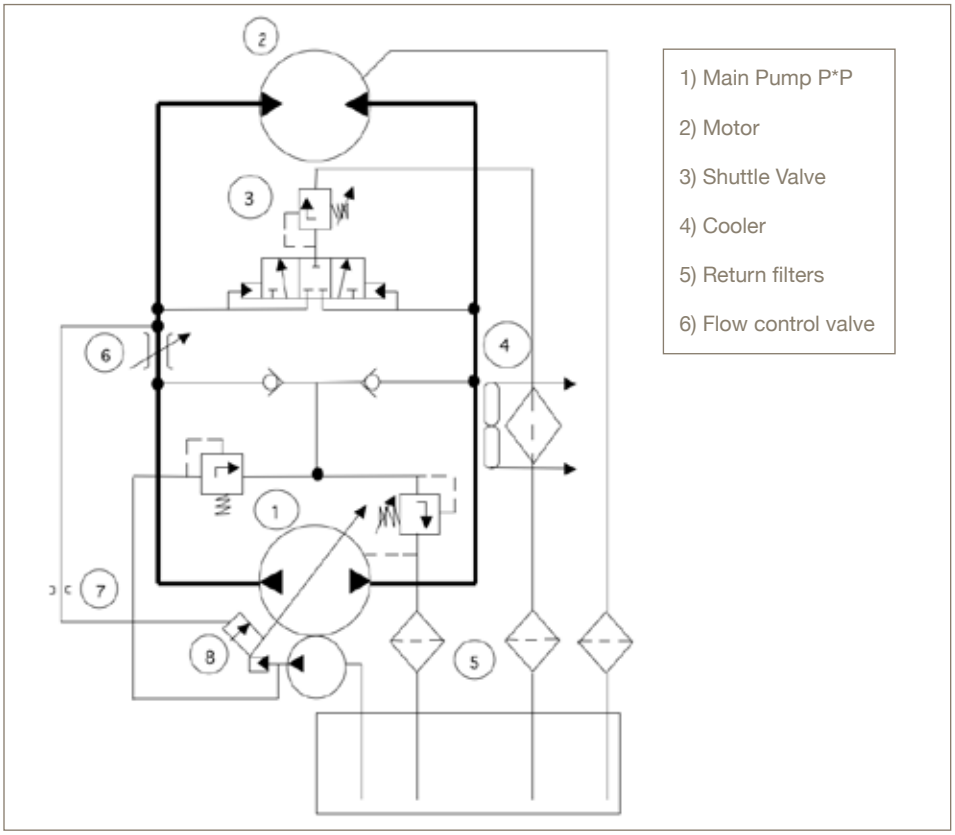
There are several applications for Parker Gold Cup pumps that require a constant speed control – i.e. cement mixing, refrigeration systems and generator drives. This is easily accomplished with a load sensing configuration.

When driving a generator it is important that the speed remains constant, independent of load, to maintain the required frequency of the generator, usually 50 or 60 Hz.

Usually, these are uni-directional applications where only one side of the pump needs to have a load sense control. The following example is based on this. However, it is possible to do this in both directions, but doing so will require additional components and modifications.

Our example is based on a variable displacement pump with a flow control valve fitted to the load side, and a load sense line (with flow limiting orifice installed) back to the pump with a fixed displacement motor. It may be necessary to install a bleed orifice between the isolation check and pressure compensator override vent port to ensure the pressure will drop off when the main system pressure source does.

A modification is made to the valve block to remove the sequence poppet (with orifice) and replace it with a sequence poppet without an orifice and a stronger spring (see circuit schematic drawing). When the pressure drop through the flow control valve exceeds the spring force on top of the poppet, the poppet lifts and allows oil into the stroking chamber to maintain the set speed.



Support

Have a question on constant speed (load sensing)? Call the Technical Support Team at **937.644.3915**, or contact **pumptechsupport@parker.com** for assistance.

Parker Hannifin Corporation
Hydraulic Pump Division
14249 Industrial Pkwy.
Marysville, OH 43040
phone 937 644 3915
fax 937 642 3738
www.parker.com