

PUMP Brief

Hydraulic Pump Division

AS-0019

Gold Cup Solution Series: Part 5

Constant Force or Constant Tension

Some applications call for the prime mover to perform either a constant force or constant tension. The marine and offshore field is the most common application where constant tension is required on the mooring winches as shown here. Or, in mining applications where belt tensioning (conveyor belts), or a constant cutting force, is required on road headers, or on any cylinder application.

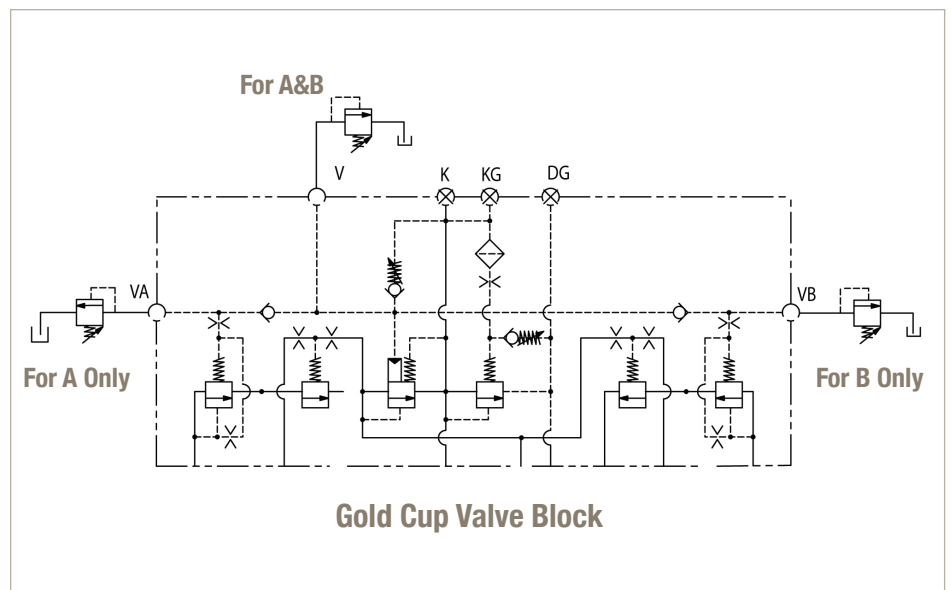


Figure 1 – Gold Cup Valve Block, shows the additional pilot relief valve controlling both ports through the “V” port, or individually through “VA” or “VB.”

By controlling the pump to full displacement, and adjusting the pilot relief valve to the tension or force required, the pump will automatically heave, or render to maintain it.

The Gold Cup pump is ideal for these applications because only a small external relief valve is required. This provides very accurate and fast response, while using little power and almost no heat compared to other system options.

Due to the design of the pumps, this feature can be achieved using one valve to control both A & B ports. Or, there is the option to control each port individually.

Important note: Do not use a relief valve that is too big because there is very little flow from the valve block. Depending on the viscosity of the oil 5 – 7.5 l/min.

The power consumed to undertake this function at 350 Bar is less than 4.4 KW.

Support

Have a question on constant force or constant tension? Call the Technical Support Team at **937.644.3915**, or contact pumptechsupport@parker.com for assistance.

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