Pressure Relief Valves - Proportional

Machine: | **Actuator:** Pump | **Function:** Pressure

Prepared for :

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Prepared by :

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Schematics

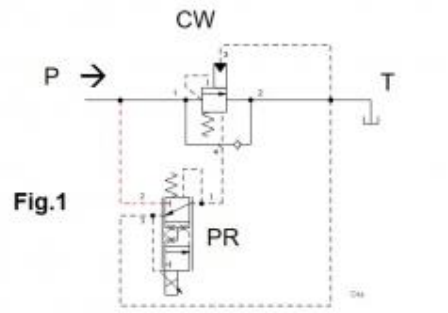
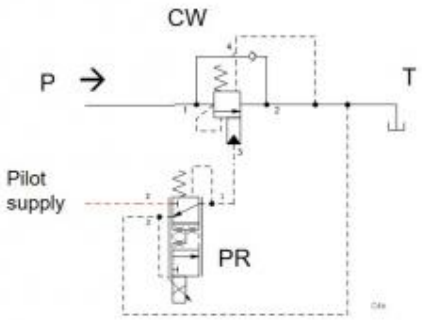


Fig.1



Summary

Related Products

Cartridges

CWBG - 4.5:1 pilot ratio, vented counterbalance valve
PRDL - Electro-proportional, direct-acting, pressure reducing/relieving valve with open transition

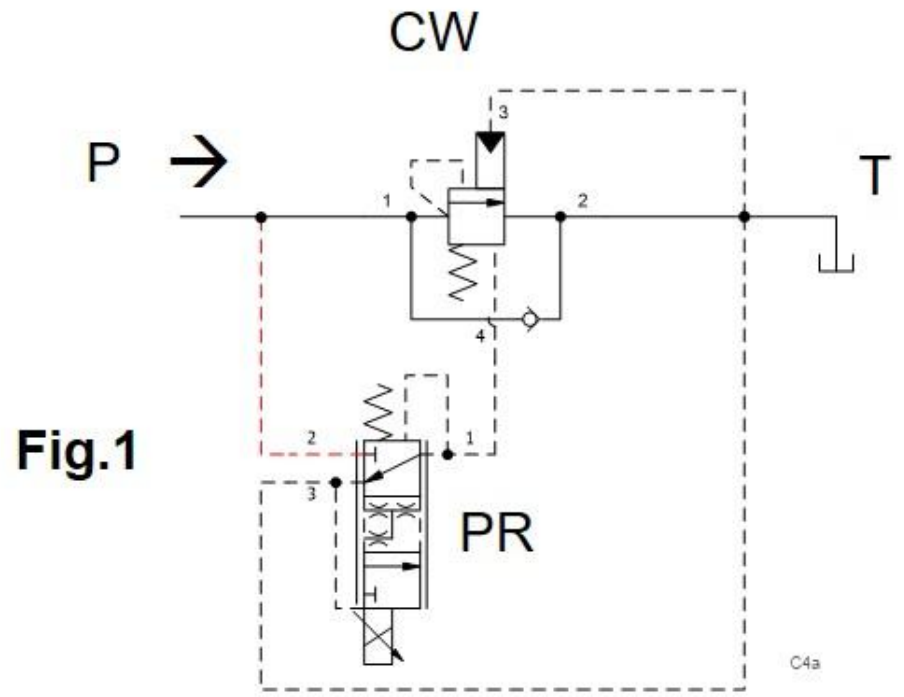
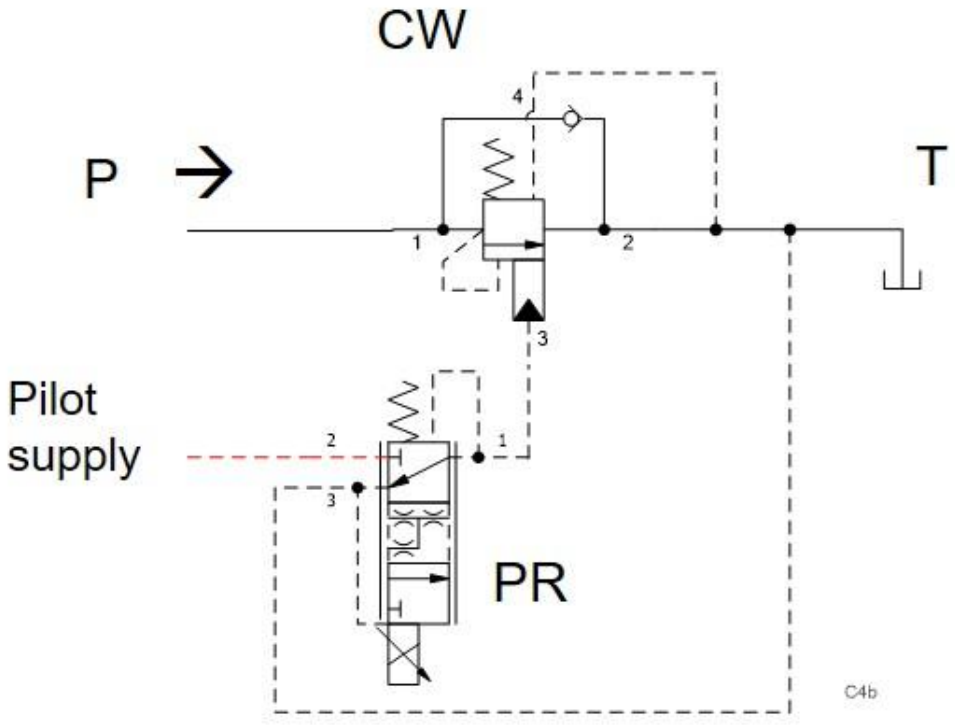


Fig.1



Standard proportional relief valves RPEC-8DN with pilot stage RBAP have a limited pressure range. Gravity also affects the setting of standard proportional relief valves. The two circuits show a proportional reducing valve to pilot operate a CBV. The combination provides an alternative pressure relief function.

- **Vented counterbalance:** **CW****
- **Proportional pressure-reducing/relieving:** **PR*L**

Benefits of this circuit arrangement

- **Fig.1** shows a proportional pressure-reducing valve controlling the pressure in the vent port of a counterbalance valve. The pressure in the vent port is additive to the setting by a factor of the pilot ratio plus one. A controlled pressure of 1000 psi will increase the setting of a 5:1 counterbalance valve by 6 times 1000 psi. The solenoid tube of the pressure control valve sees max 1000 psi, not the resulting 6000 psi

setting, therefore a safety margin is maintained.

- **Fig.2** shows a shows a proportional pressure-reducing valve controlling the pressure on the pilot line of the counterbalance valve. The control pressure reduces the setting by a factor based on the pilot ratio. The setting of a CW*G-LGN set at 6000 psi with a pilot ratio of 5:1 can be reduced to a minimum pressure by a pilot pressure of 1200 psi. So the CW*G is fully open. The circuit requires a separate source of 1200 psi.
- Both circuit incorporate a reverse free-flow check.