



KDG4V vs. KFDG4V: Understanding Vickers' Proportional Valve Series

Vickers' KDG4V and KFDG4V series are both directional proportional valves widely used across Eaton's industrial and mobile hydraulic lineup, and the model numbers alone don't make the distinction obvious. The real difference comes down to feedback type, control precision, and the level of onboard electronics each series carries.

Here's how the two compare, and what it means when you're specifying a replacement or evaluating a unit for repair.

Feedback and Control Loop

The KDG4V series is an open-loop proportional valve — spool position is driven directly by the command signal without a feedback device confirming actual position. The KFDG4V series adds closed-loop control with integrated spool position feedback, giving it tighter repeatability and better resistance to drift caused by pressure variation or internal friction changes over time.

Precision and Repeatability

Because the KFDG4V confirms actual spool position rather than assuming it from command signal alone, it holds tighter tolerances across changing load and pressure conditions. The KDG4V, while less precise under varying conditions, is a simpler and more cost-effective option for applications where exact repeatability matters less than basic proportional control.

Electronics and Calibration

The closed-loop electronics on a KFDG4V are not a simple add-on to a KDG4V — they use different amplifier calibration data entirely. When either valve comes in for repair, confirming the exact series and electronics variant before calibration is critical, since applying open-loop calibration data to a closed-loop valve (or vice versa) will produce a unit that tests inconsistently even after a rebuild.

Which One Belongs in Your System

If your application can tolerate some drift under varying load and cost is a priority, the KDG4V is often sufficient. If your system needs tight, repeatable spool positioning regardless of pressure fluctuation, the KFDG4V's closed-



loop design is the better fit. Matching a replacement to the correct series and feedback type matters more than matching flow rating alone.

Not sure which Vickers series is currently installed in your system, or need one diagnosed and repaired to spec? [Performance Servo](#) can identify the exact KDG4V or KFDG4V variant and rebuild it with tested, calibrated electronics.