

D680 DIRECT DRIVE PILOTED PROPORTIONAL SERVOVALVES

EXCEPTIONAL DYNAMICS
ENSURES FAST, PRECISION
POSITIONING FOR WOOD
PROCESSING.

The D680 Direct Drive Pilot Stage Proportional Flow Control Valves with integrated on board electronics are throttle valves for 2-, 3-, 4- and 5-way applications. They are suitable for electrohydraulic position, velocity, pressure and force control systems, including those with high dynamic response requirements.

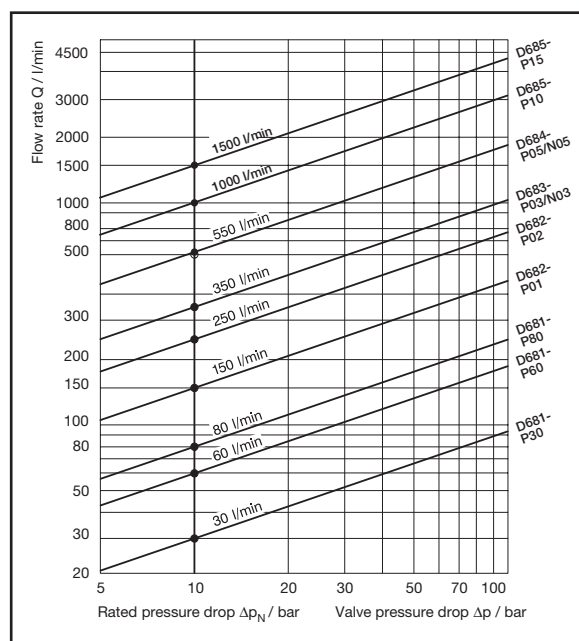
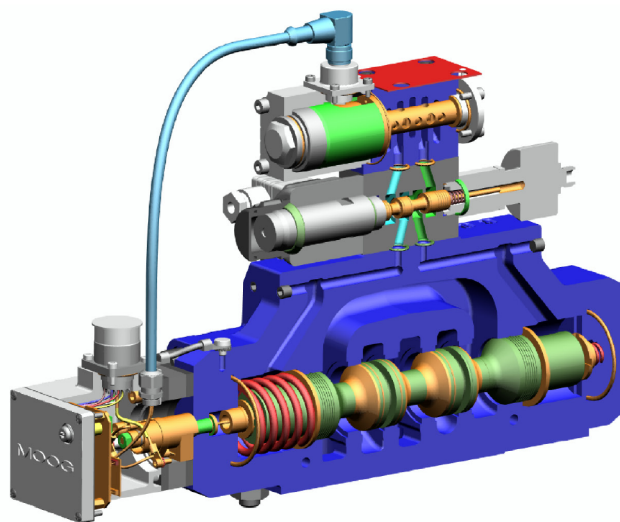
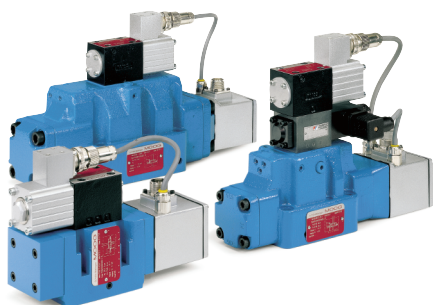
The D680 series valve incorporates into its 2-stage design, a Direct Drive valve (DDV) pilot stage.

The valve model numbers listed on the back were specifically designed to withstand the harsh environment, vibration, and shock loads found in wood/lumber processing plants.

Benefits of the Direct Drive Pilot Valve

- Requires no pilot leakage flow resulting in considerable energy savings
- Dynamics of the direct drive valve is nearly independent of the operating pressure
- Reliable operation; the excellent pressure gain of the pilot valve with spool/bushing provides high spool driving forces to the long stroke main spool; this ensures enhanced main spool position control even with high flow forces and contaminated fluids
- Excellent dynamics based on a high natural frequency allows high main spool position loop gain, resulting in extremely good static and dynamic response of the main valve

A direct drive pilot valve requires no pilot leakage flow which results in considerable energy savings, especially for systems with multiple valves. The dynamics of the direct drive valve is nearly independent of the operating pressure.

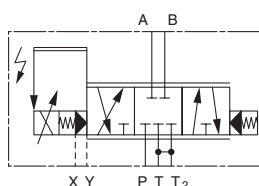


Operation of the Mini Direct Drive Valves

The position control loop for the main stage spool, position transducer and pilot valve is closed by the integrated electronics. An electric command signal (flow rate set point) is applied to the integrated position controller which drives the current in the pilot valve coil. The position transducer (LVDT) which is excited via an oscillator, measures the position of the main spool (actual value, position voltage). This signal is then demodulated and fed back to the controller where it is compared with the command signal.

The controller drives the pilot valve until the error between command signal and feedback signal is zero. Thus, the position of the main spool is proportional to the electric command signal.

D683/4-P Series Hydraulic Symbol



Technical Data Direct Drive Pilot Stage Valves

Model Number	D681-4164 (D681-4030)	D682-4183 (D682-4034)	D682-4184 (D682-4039)	D682-4182 (D682-4027)	D683-4111
Type Code	P80KAUD4NSM5-O	P01KAUD4NSM5-O	P02KAUF4NSM5-O	P02KYUD4NSM5-O	P03KYUD4NSM5-O
Notes	Elec. Housing vibrate damping plate	Elec. Housing vibrate damping plate	Elec. Housing vibrate damping plate	Elec. Housing vibrate damping plate	Elec. Housing vibrate damping plate
Flow (gpm @ 1000 psi total drop)	40	100	170	170	238
Flow (gpm @ 150 psi total drop)	21	40	66	66	92
Max Supply Pressure (on main stage)	5000	5000	5000	5000	5000
Null Cut	Proportional 0 to 3% overlap	Proportional 0 to 3% overlap	Proportional 0 to 3% overlap	Proportional 0 to 3% overlap, Curvilinear	Proportional 0 to 3% overlap, Curvilinear
Fail-Safe	Spool Shift P>A, B>T	Spool Shift P>A, B>T	Spool Shift P>A, B>T	Spool Shift P>A, B>T	Spool Shift P>A, B>T
Seal Type	Buna	Buna	Buna	Buna	Buna
Elec Conn	7-Pin	7-Pin	7-Pin	7-Pin	7-Pin
Input Command	+/-10VDC	+/-10VDC	+/-10VDC	+/-10VDC	+/-10VDC
Power Supply	+24VDC	+24VDC	+24VDC	+24VDC	+24VDC

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