

Hydraulic Gear Pumps

- Right-hand rotation
- Pressure balanced
- SAE ORB Inlet/Outlet ports
- 10-micron filtration required

These reliable, high-efficiency gear pumps provide a comparably continuous, nonpulsating flow. Through-bore, bushing-type pumps for intermittent and continuous-duty applications. Lightweight design features aluminum center section with cast-aluminum end covers.

Displacement (Cu. In./Rev.) * 1000 PSI	GPM @ 1800 rpm and 1000 PSI	GPM @ 3600 RPM and 1000 PSI	Max. RPM and Continuous PSI	Min. RPM	Max. RPM	Ports (Inlet)	Ports (Outlet)	Shaft Extension (in.)	Mfr. Model	Item No.
W600 Series, SAE AA 2 Bolt										
0.183	1.4	2.7	4,000	700 RPM	4,000 RPM	1/4-14	3/4-16	1/2 x 1 1/2 Keyed	1850222	1DBC3
0.214	1.6	3.1	4,000	700 RPM	4,000 RPM	1/4-14	3/4-16	1/2 x 1 1/2 Keyed	1850223	1DBC4
0.244	1.8	3.6	4,000	700 RPM	4,000 RPM	1/4-14	3/4-16	1/2 x 1 1/2 Keyed	1850224	1DBC5
0.305	2.2	4.5	4,000	700 RPM	4,000 RPM	1/4-14	3/4-16	1/2 x 1 1/2 Keyed	1850225	1DBC6
0.427	3.1	6.3	4,000	700 RPM	3,450 RPM	1/4-14	3/4-16	1/2 x 1 1/2 Keyed	1850226	1DBC7
0.61	4.5	8.9	3,200	700 RPM	2,800 RPM	1/4-14	3/4-16	1/2 x 1 1/2 Keyed	1850227	1DBC8
W900 Series, SAE A 2 Bolt										
0.37	2.7	5.4	4,000	500 RPM	4,000 RPM	1/4-14	3/4-16	3/4 x 1 1/4 Keyed	1800288	4F665
0.49	3.6	7.1	4,000	500 RPM	4,000 RPM	1 1/8-12	1 1/4-14	3/4 x 1 1/4 Keyed	1800289	4F666
0.67	4.9	9.8	4,000	500 RPM	3,600 RPM	1 1/8-12	1 1/4-14	3/4 x 1 1/4 Keyed	1800290	4F667
0.85	6.3	—	4,000	500 RPM	3,300 RPM	1 1/8-12	1 1/4-14	3/4 x 1 1/4 Keyed	1800291	4F668
0.98	7.1	—	4,000	500 RPM	3,000 RPM	1 1/8-12	1 1/4-14	3/4 x 1 1/4 Keyed	1800292	4F669
1.16	8.5	—	4,000	500 RPM	3,000 RPM	1 1/8-12	1 1/4-12	3/4 x 1 1/4 Keyed	1800293	4F671
1.4	10.5	—	3,200	500 RPM	2,500 RPM	1 1/8-12	1 1/4-12	3/4 x 1 1/4 Keyed	1802741	4NE30
1.6	12	—	2,700	500 RPM	2,400 RPM	1 1/8-12	1 1/4-12	3/4 x 1 1/4 Keyed	1802742	4NE31
* 1 cu.-in. = 16.4 cu.-cm (cc).										

* 1 cu.-in. = 16.4 cu.-cm (cc).



4F665

2-Stage Hi/Low Gear Pumps

For presses, log splitters, clamping units, and compactors. Automatic 2-speed operation. First-stage pump unloads fully at 450 psi; second stage operates up to 3000 psi. Generally, 5-HP input is required for 4F663 and 8-HP for 4F664. Clockwise rotation. 1/2" dia. x 1 1/2" L drive shaft with #404 Woodruff drive key. Motor coupling and adapter not included. Direct drive only. 5ZPL6 and 5ZPL7 have SAE "A" 5/8" keyed shaft.

Nom. Flow (gpm)	HP Req.	Input RPM	GPM @ Pressure		Displacement @ PSI (cubic inches/rev.)		Ports		Max. psi		Mounting Flange	Mfr. Model	Item No.
			250 psi	2000 psi	Low	High	Inlet	Outlet	1st Stage	2nd Stage			
11.0	5	3,600	10.94	2.72	0.517	0.194	1 in Tube	1/2 in NPTF	600	3,000	4F17	1002508	4F663
13.6	10	3,600	13.6	2.6	0.647	0.194	1 in Tube	1/2 in NPTF	600	3,000	4F17	1003754	5ZPL8
16	11	3,600	15.91	3.62	0.776	0.258 pulg. cub./rev	1 in Tube	1/2 in NPTF	600	3,000	4F17	1002509	4F664
22	15	3,600	22	6.3	0.93	0.465	1 in NPTF	3/4 in NPTF	750	3,000	SAE A	1080085	5ZPL6
28	20	3,600	28	6.3	1.395	0.465	1 in NPTF	3/4 in NPTF	750	3,000	SAE A	1080086	5ZPL7



4F663

Threaded Cartridge Valves, Bodies, and Coils

4DML7 and 4UA84—Provide uncompensated adjustable flow control.

4DML8 and 4UA86—For continuous duty applications. Best option for setting hydraulic system pressure.

4DML9 and 4UA87—Used as crossover relief valves to limit pressure spikes.

4DMN1 and 4UA85—Can be used in a leg of a hydraulic system to reduce pressure lower than the system pressure. Also act as a relief valve, relieving pressure spikes between regulated port and actuator.

4DMK4—Provides control of an overrunning load and metering, and is suitable for holding a load.

4DML1—Flow goes in the nose, and pressure compensated flow goes out top port 3, while bypass flow is unregulated and goes out port 2.

4DML3—Consists of a steel ball that can seal against 1 of 2 adjacent seats, providing a path from the highest pressure signal to another function.

4DML5—In the side-to-nose direction, it performs as a standard needle valve, limiting flow. Allows free flow in the reverse direction, nose to side.

4UA88—Use for on/off or as a selector switch for 2 functions. Often used for raising and lowering a single-acting cylinder.

4UA89—Used for reversing valve for raising and lowering a double-acting cylinder or to control the actuation of a hydraulic motor.

4UA90 and 4UA91—Require 2 coils to operate.

Hydraulic Cartridge Valve Base—Allow individual piping of threaded cartridge valves.

Cartridge Valve Type	Valve Cavity Size	Max. Flow (gpm)	Max. Pressure	Mfr. Model	Item No.
Threaded Cartridge Valves					
08 Size Valves					
Check	C08-2	10	5,000 psi	CVH081P	4DML6
Needle	C08-2	10	5,500 psi	NVH081K	4DML7
Pilot-Operated Relief	C08-2	20	5,000 psi	RAH081S50	4DML8
Direct Acting Differential Area Relief	C08-2	12	5,000 psi	RDH083S50	4DML9
Pressure Reducing	C08-3	8	5,000 psi	PRH081S50	4DMN1
Normally Closed Manual Poppet	C08-2	8	3,000 psi	DL081K	4DMN4
Normally Open Solenoid	C08-2	8	3,600 psi	DSL081N	4DMN2
Normally Closed Solenoid	C08-2	8	3,600 psi	DSL081C	4DMN3
10 Size Valves					
Check	C10-2	16	5,000 psi	CVH103P	4UA81
Needle	C10-2	16	5,500 psi	NVH101K	4UA84
Pilot-Operated Relief	C10-2	30	5,000 psi	RAH101S50	4UA86
Differential Area Relief	C10-2	20	5,000 psi	RDH103S50	4UA87
Reducing/Relieving	C10-3	15	5,000 psi	PRH101S50	4UA85
Counterbalance	C10-3	12	5,000 psi	CB101AS30	4DMK4
Pressure Compensated Flow Control Restrictive Style	C10-2	10.6	6,000 psi	J04E22N	4DMK9
Pressure Compensated Flow Control w/Bypass	C10-3	12	6,000 psi	J04D32N	4DML1
Single Pilot-Operated Check	C10-3	8	5,000 psi	CPH104P	4DML2
Shuttle	C10-3	10	5,000 psi	CSH101B	4DML3
Normally Closed Manual Poppet	C10-2	13	3,000 psi	DL101K	4DML4
Needle with Reverse Check	C10-2	12	3,000 psi	FV101S	4DML5
Normally Open Solenoid	C10-2	15	3,600 psi	DSL101N	4UA83
Normally Closed Solenoid	C10-2	15	3,600 psi	DSL101C	4UA82
3-Way Solenoid	C10-3	4.5	3,600 psi	DSL103A	4UA88
Directional Control Valve	C10-4	8	3,600 psi	DSL104B	4UA89
Directional Control Valve	C10-4	7	3,600 psi	DSL105C1	4UA90
Directional Control Valve	C10-4	5	3,600 psi	DSL105C9	4UA91
10 Size Valve Assemblies					
Double Pilot-Operated Check	—	15	5,000 psi	CDPH103A20-8T	4DMK7
Fits Valve No.					
Hydraulic Cartridge Valve Base					
4DML6, 4DML7, 4DML8, 4DML9, 4DMN2, 4DMN3, 4DMN4	Aluminum	—	#6 SAE	B08-2-A6T	4DMN5
—	Steel	—	#6 SAE	B08-2-6T	4DMN6
4DMN1	Aluminum	—	#6 SAE	B08-3-A6T	4DMN7
—	Steel	—	#6 SAE	B08-3-6T	4DMN8
4DMK9, 4DML4, 4DML5, 4UA81, 4UA82, 4UA83, 4UA84, 4UA86, 4UA87	Aluminum	SAE-8	#8 SAE	B10-2-A8T	4UA95
—	Steel	—	#8 SAE	B10-2-8T	4DMK6
4DMK4, 4DML1, 4DML2, 4DML3, 4UA85, 4UA88	Aluminum	SAE-8	#8 SAE	B10-3-A8T	4UA96
—	Steel	—	#8 SAE	B10-3-8T	4DMK5
4UA89, 4UA90, 4UA91	Aluminum	SAE-8	#8 SAE	B10-4-A8T	4UA97
Voltage					
Solenoid Valve Coils					
08 Size Coils					
12V DC	Double Leads	4DMN2, 4DMN3	—	CCP012L	4DMN9
—	Double Spade		—	CCP012S	4DMN3
24V DC	Double Leads		—	CCP024L	4DMP1
—	Double Spade		—	CCP024S	4DMP4
110/120V AC	Conduit Connector	—	—	CCP115C	4DMP2
10 Size Coils					
12V DC	Double Leads	4UA82, 4UA83, 4UA88, 4UA89, 4UA90, 4UA91	—	CAP012L	4DMK2
—	Double Spade		—	CAP012S	4DMJ9
24V DC	Double Leads		—	CAP024L	4DMK3
—	Double Spade		—	CAP024S	4DMK1
110/120V AC	Conduit Connector	—	—	CAP115C	4DMJ8



4UA84



4UA86



4UA82



4UA88



4DMK7