



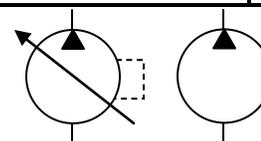
Technical Bulletin

ENGINEERING

1 of 4

PVG PUMPS

Application Guidelines



The following information must be considered when applying Oilgear PVG Pumps. These guidelines are to be used to help design systems for continuous duty. Please consult with the Oilgear Technical Sales Department when the application and/or system requirements vary from the following:

SPECIFICATIONS (See Addition Notes)	048	065	075	100	130	150	180
Drive							
Maximum rpm	2700	2700	2700	2400	2400	2400	2400
Minimum rpm	600	600	600	600	600	600	600
Torque to turn shaft (ft. lbs.)	9	9	9	24	24	40	50
Rotational Moment of Inertia (lb-in ²)	21	21	21	50	47	150	152
Inlet							
Pressure (psia)							
Maximum rpm (see above)	9.8	12.9	14.8	14.5	17.5	17.2	22.3
1800 rpm	5.6	6.2	7.3	11.2	10.8	11.4	13.3
1500 rpm	5.3	5.6	6.8	10.5	9.5	9.8	11.1
1200 rpm	5.1	5.2	6.3	9.5	8.5	8.7	9.4
900 rpm	5.0	5.1	5.9	8.9	7.7	7.9	7.4
600 rpm	5.0	5.1	5.6	8.3	7.1	7.2	7.1
Output							
Pressure (psi)							
Peak (see "Additional Notes" for definition)	5800	5800	4250	5800	4250	5800	5800
Continuous	5000	5000	3750	5000	3750	5000	5000
Minimum	100	100	100	100	100	100	100
Minimum Volume (gpm) at 1800 rpm & rated pressure for full displacement	18.5	26.1	31.5	39.0	55.4	63.0	75.6
<i>Pumps should not be run at neutral for more than 30 consecutive minutes. For longer times, a 10% minimum stroke should be maintained.</i>							
Case							
Note: Case pressure to inlet different pressure limitations take priority and must be followed per graph in "CHARTS".							
Maximum Pressure (psi) w/ Standard Shaft Seal	25*	25*	25*	25*	25*	25*	25*
Minimum Drain Line Inside Diameter (inch)	1	1	1	1	1	1	1
* Consult Oilgear Technical Sales for higher pressures							

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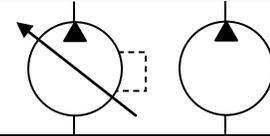
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PVG PUMPS

Application Guidelines

ENGINEERING

2 of 4

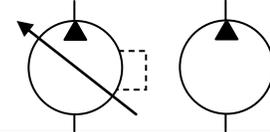


SPECIFICATIONS (See Addition Notes)	048	065	075	100	130	150	180
Control							
<u>Minimum Pressure (psi)</u>							
Pressure Controls - minimum compensator setting	200	200	200	200	200	250	250
Volume Controls (VS, VM)-minimum pilot pressure	500	500	500	500	500	500	800 ^A
<u>Maximum Pilot Pressure (psi)</u>							
Volume Control - VS	600	600	600	600	600	600	N/A
Volume Control - VM	1000	1000	1000	1000	1000	1000	1000
<u>Stroking Rate (msec) at rated pressure</u>							
Pressure Controls (minimum) *							
On Stroke	40	40	40	40	40	45	45
Off Stroke	50	50	50	50	50	60	60
<u>Volume Controls (VS, VM)</u>							
On Stroke	250	250	250	250	250	250	250
Off Stroke	250	250	250	250	250	250	250
* Fastest possible time, stroking times may be slower depending on conditions. Consult Oilgear Technical Sales.							
^A V-S control not available with PVG-180							
Fluid							
Note: Also see "Additional Notes" for filtration and contamination levels.							
Viscosity (SSU)							
Minimum	65	65	65	65	65	65	65
Maximum	2000	2000	2000	2000	2000	2000	2000
Temperature							
Note: Minimum and maximum viscosities must be observed.							
Fluid Operating Temperature (°F) at Inlet Port							
Maximum	190	190	190	190	190	190	190
Minimum	14	14	14	14	14	14	14
Minimum Starting	-40	-40	-40	-40	-40	-40	-40
Case (°F)							
Maximum *	230	230	230	230	230	230	230
* w/ standard seals							

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Additional Notes

Inlet

1. Pumps mounted above the reservoir must be arranged to insure pump will prime when started.
2. When supercharging, maximum allowable inlet pressure is 100 psi. Volume required to fully supercharge units must be sufficient to maintain a minimum required inlet pressure.
3. For low viscosity and HF water based fluids consult the Oilgear Technical Sales Department.
4. Oilgear does not recommend suction line filtration. Suction line filtration can cause high inlet vacuum, which limits pump operating speed. Return line filtration is the preferred method for open circuit systems.

Output

Be sure system and pumps are protected against overloads with high pressure relief valves. Peak pressure is the maximum pressure the unit can be operated at for 1% or less of every minute.

Case

1. Drain
 - (a) Fill case with fluid before starting
 - (b) Arrange case drain line to keep case full of fluid
 - (c) Use a minimum of bends returning case drain line to reservoir below minimum fluid level.
2. Orientation

Pump orientation is not restricted. But, case drain must be arranged to keep case full of fluid at all times. See *Oilgear Service Bulletin 947019* for horizontally mounted units. For vertically mounted units, see *Bulletin 90014 "Service Instructions, Installation of Vertically Mounted Axial Piston Units"*.

Control

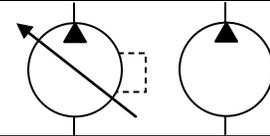
Case bleed of 1 to 2 gpm is recommended for volume controlled pumps, especially if operated at neutral for long periods of time.

Fluid

Contamination level of ISO code 21/19/16 is maximum and 0.1% of water is maximum level for the pump with controls not using a servo valve. Contamination level of ISO code 17/15/11 is maximum for normal life (15/13/10 for long life) and a 0.1% of water is maximum level for the pump with controls using a VM control. Contamination level of ISO code 17/15/12 is maximum for normal life and a 0.1% of water is maximum level for the pump with controls using a VS control.

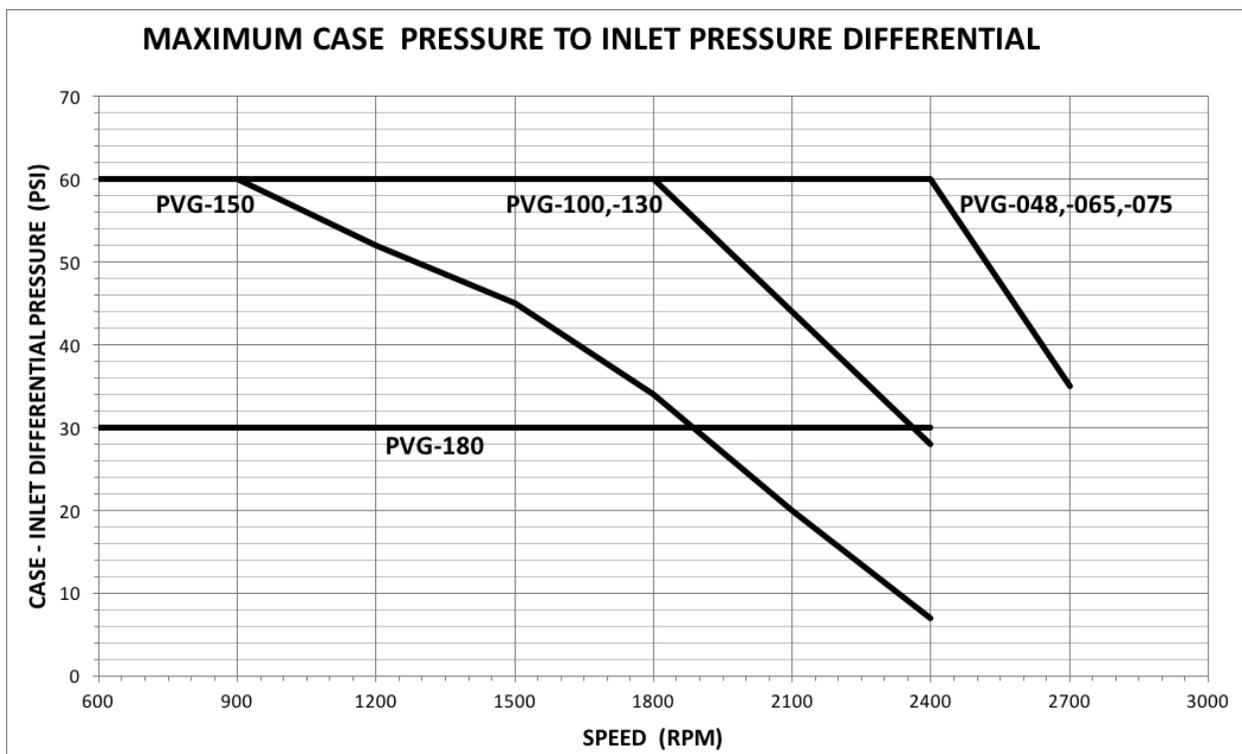
Multiple Unit Mounting

Additional mounting support should be considered for multiple pump units, especially in mobile or high vibration applications. Dual pump adapters are supplied with threaded holes for support bracket mounting. Refer to data sheet DS-47387 (PVG-150 2 bolt), DS-47388 (PVG-150 4 bolt) DS-47946 (PVG-100,-130), DS-47958 (PVG-048,-065-075), for hole location and size.



CHARTS

Maximum Case to Inlet Pressure Differential: Case pressure cannot exceed inlet pressure by values higher than those shown on the following graph.



Information contained in this bulletin subject to change without notice. The current revision of the document can be found on the Oilgear website or by contacting your Oilgear representative.