Technical Bulletin

PVV PUMPS

Application Guidelines

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The following information should be considered when applying Oilgear PVV Pumps. These guidelines are to be used to help design systems for continuous duty. Please consult the Oilgear Technical Sales Department when application and/or system requirement vary (even) slightly from the following.

Specifications (Also See "Additional Notes")	**PVV 200**	**PVV 250**	**PVV 440**	**PVV 540**
DRIVE				
Maximum rpm				
Flooded Inlet (suction)	1800	1800	N/A	1200
Supercharged Inlet	1800	1800	1500 **	1500 **
Minimum rpm				
Flooded Inlet (suction)	600	600	N/A	600
Supercharged Inlet	600	600	600	600
Torque to turn shaft (ft. -lbs.)	14	14	36	36
** Consult Oilgear Tech. Sales Dept.				
Inlet				
Pressure (psia)				
1800 rpm	14.3	14.7	N/A	-
1500 rpm	10.8	11.5	**	**
1200 rpm	8.0	10.0	29	11.1
** Consult Oilgear Tech. Sales Dept.				
Output				
Pressure (psi)				
Maximum				
Peak (See "additional notes")	6500	5800	7250	5800
Continuous	6000	5000	6500	5000
Minimum	100	100	100	100
Minimum Volume				
(gpm) @ rated pressure, and indicated speed for full displacement	86 @ 1800 rpm	109 @ 1800 rpm	125 @ 1200 rpm	155 @ 1200 rpm
Pumps should not be run at neutral for more than 30 consecutive minutes. For longer times, a 10% minimum stroke should be maintained.				
Case				
Maximum Pressure psi w/Std. Shaft Seal	25	25	25	25
Minimum Drain Size (inch tube)	1.25	1.25	1.5	1.5

Orientation: See Oilgear Service Instructions Bulletins 947027, 947028, or 947029 for horizontal mounting.
See Oilgear Service Instruction Bulletin 90014 for vertical mounting.

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Specifications (Also See "Additional Notes")	PVV 200	PVV 250	PVV 440/540 "A" Series	PVV 540 "B" Series
Control				
Minimum Pilot Pressure (psi) for Volume Controls (VM, VS & RU)	700	700	500	700
Maximum Pilot Pressure (psi) for Volume Controls (VM, VS & RU)	1000	1000	1000	1000
Stroking Rate (msec.) at rated pressure				
Pressure Controls (minimum)*				
On Stroke	140	140	N/A/300	350
Off Stroke	100	100	N/A/100	100
Volume Controls (VM, VS & RU) with minimum control psi				
On and Off stroke	375	375	375/375	270
* Fastest possible time; stroking times may be Slower, depending on conditions.				
Consult Oilgear Technical Sales Department.				
Fluids Also see "Additional Notes" for filtration and contamination levels. Mineral oil fluids shall include an anti-wear package				
Viscosity SSU				
Minimum	80	80	80	80
Maximum	2000	2000	2000	2000
Operating Temperature (Fo)*				
Inlet				
Maximum	160	160	160	160
Minimum	-20	-20	-20	-20
Case maximum	210	210	200	200
* Minimum and maximum viscosity should be observed.				

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ADDITIONAL NOTES

Inlet

1. Pumps mounted above the reservoir must be arranged to insure pump will "prime" when started. PVV-440 is available for supercharged service only.

2. When supercharging:
   a) Maximum allowable supercharge pressure is 200 psi.
   b) Volume must be sufficient to maintain inlet pressure.

3. For low viscosity and HF water based fluids consult factory.

Outlet

1. Peak Pressure:
   The unit can be operated at peak pressure 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 947027, 947028 or 947029 for horizontally mounted units. ***For vertically mounted units, see Bulletin 90014 "Service Instructions, Installation of Vertically Mounted Axial Piston Units".***

Control

1. Case bleed of 2 gpm is recommended for volume controlled pumps and/or pumps hydraulically remote controlled. Note: A bleed orifice is incorporated internally on all VM, VS, & RU controlled pumps.

Fluid

1. **Filtration**
   a) At least 1/3 of pump volume must be filtered with an element having a B_{10} (c) = 200.
   b) All fluid to a swing-plate servo valve control must be filtered with an element having a B_{10} (c) = 200
   c) All fluid to other servo valve controls must be through a B_{10} (c) 200 element.

2. **Maximum** contamination level of ISO (c) 20/18/15 and 0.1% of maximum of water.

3. Pumps must be run with anti-wear type mineral oil.

4. For low viscosity and HF water base fluids consult factory.

Start-up

1. Priming - Provisions must be made to bleed air from the high pressure lines.