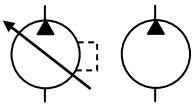
OILGEAR
BEST UNDER PRESSURE

Technical Bulletin
PVWJ Application Guidelines for Low Viscosity Fluids

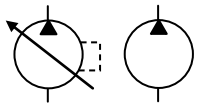


				A-Frame			B-Frame			C-Frame			
Displacement			cm^3	011	014	022	025	034	046	064	076	098	130
Outlet	Pressure	Rated Continuous Pressure	psi bar	3000 205	3000 205	2000 135	3000 205	3000 205	2000 135	3000 205	3000 205	2000 135	1200 85
		Peak Pressure see definition in "Notes" section	psi bar	3500 240	3500 240	2500 175	3500 240	3500 240	2500 175	3500 240	3500 240	2500 175	1500 105
		Minimum Pressure	psi bar	100 7			100 7			100 7			
		Minimum Pressure with Pressure Controls P-L control can achieve lower minimum pressure	psi bar	750 51,7			750 51,7			750 51,7			
	Flow	Nominal Outlet Flow @ 1800 rpm, full stroke, rated pressure	gpm lpm	4.0 15,1	5.5 20,6	9.1 34,4	10.0 37.9	12.7 48,1	20.3 76,9	26.3 99,6	32.6 123,6	42.8 162,2	56.6 214,2
Input Shaft	Speed	Maximum Speed @ Full Stroke May require supercharged inlet.	rpm	1800			1800			1800			
		Min Speed	rpm	600			600			600			
	Torque	Approximate torque to turn Drive Shaft	ft-lbs N-m	1.7 to 2.1 2,3 to 2,8			2.9 to 3.3 4,0 to 4,5			7.9 to 8.3 10,8 to 11,3			
		Moment of Inertia for Rotating Group	$lb\text{-}in^2$ $kg\text{-}cm^2$	5 14,6			21 61,5			53 155,1			
Fluid Temperature ①		Maximum Operating - At Inlet	°F °C	190 90			190 90			190 90			
		Minimum Operating - At Inlet	°F °C	14 -10			14 -10			14 -10			
		Minimum Starting - At Inlet	°F °C	-40 -40			-40 -40			-40 -40			
		Maximum Operating - Case with standard seals	°F °C	230 110			230 110			230 110			
Case	Pressure	Max Continuous Case Pressure	psi bar	15 1,0			15 1,0			15 1,0			
		Maximum Case Pressure with Standard Shaft Seal	psi bar	25 1,7			25 1,7			25 1,7			
		Maximum Case Pressure With High Pressure Shaft Seal	psi bar	100 7,0			100 7,0			100 7,0			
	Fill	Approximate amount fluid necessary to fill pump case	ounces cc	10 300			24 700			30 900			
Inlet Pressure		Refer to the graphs in the "Inlet Data" section of Oilgear Bulletin 47085 to determine pump inlet pressure requirements.											

Telephone: (402) 727-9700
Email: ussales@oilgear.com
Website: www.oilgear.com

THE OILGEAR COMPANY
905 South Downing Street
Fremont, NE USA 68025

Bulletin: 747085A
Revised: February, 2025



Customer Connections	Case Drain Port		#8 SAE Straight Thread	#12 SAE Straight Thread	#12 SAE Straight Thread
	Minimum Case Drain Line Size Inside Diameter	inch mm	0.5 12	0.625 16	0.75 19
	Remote Pressure Compensator Port	inch mm	#4 SAE Straight Thread	#4 SAE Straight Thread	#4 SAE Straight Thread
	Load Sensing Port	inch mm	#6 SAE Straight Thread	#6 SAE Straight Thread	#6 SAE Straight Thread
Fluid	Min Allowable Fluid Viscosity	SSU cSt	65 11.7	65 11.7	65 11.7
	Max Allowable Fluid Viscosity	SSU cSt	2000 450	2000 450	2000 450
	Max Allowable Contamination	ISO 4406	21/19/16	21/19/16	21/19/16
Control Information	Min Pilot Pressure to destroke Pump	psi bar	200 13,8	400 27,6	600 41,4
	Minimum % Stroke Attainable with Standard Stroke Limiter		25%	25%	25%
	On-Stroke Response Time ②		100 mS	100 mS	200 mS
	Off-Stroke Response Time ②		80 mS	80 mS	200 mS

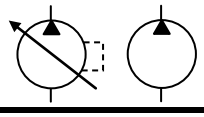
① Minimum and Maximum viscosities MUST be observed.

② Fastest possible time, stroking times may be slower depending on conditions Consult Oilgear technical sales.

Telephone: (402) 727-9700
Email: ussales@oilgear.com
Website: www.oilgear.com

THE OILGEAR COMPANY
905 South Downing Street
Fremont, NE USA 68025

Bulletin: 747085A
Revised: February, 2025



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. Oilgear does not recommend suction line filtration. Suction line filtration can starve the pump if the pressure drop across the filter becomes excessive. Return line filtration is the preferred method.

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 947085 for horizontally mounted units. For vertically mounted units, see Bulletin 90014 "Service Instructions, Installation of Vertically Mounted Axial Piston Units".*

Fluid

Guidelines outlined in this document are for HFA, B, C and D water based fluids ONLY.
For applications outside the guidelines, please consult the Oilgear Technical Sales Department.

Special Notes

Pumps for low viscosity applications will incorporate a Nitrile shaft seal and a special shoe retainer.

Multiple Unit Mounting

Additional mounting support should be considered for multiple pump units, especially in mobile or high vibration applications.