

Pumps Technology Summary

Advantages & Limitations	External Gear Pumps	External Gear Pumps
Maximum Flow Rate	42 L/min (11.1 gpm) (higher possible)	27 L/min (7.1 gpm)
Volume Displacement per Revolution	.017 ml	3 ml
Drive Speed rpm (maximum)	6000	10000
Maximum Differential Pressure	8.6 bar (125 psi) (higher possible)	~14 meters head (~46 ft head)
Accuracy and Repeatability	high	n/a
Autoclavability / Sterility	not with PTFE gears	not with PTFE components
Calibration / Recalibration	frequent	low frequency
Chemical Inertness	high	high
Corrosion Resistance	good	good
Cross-Contamination	yes (thorough flushing is required)	yes (thorough flushing is required)
Dead Volume	very low	low
Direct Contact with Mechanical Parts of the Pumphead	yes	yes
Run Dry	no	no

Fittings	hose barb or screw coupling	hose barb or screw coupling
Flow Rate Sensitivity to Differential Pressure	low	very high
Interchangeability of Pumpheads	easy	easy
Leakage Susceptibility	low	low
Maintenance (Time and Cost)	medium (service kits)	medium (service kits)
Multi-Channel Systems	no	no
Pulsation Ratio	very low	n/a
Pumping of High Viscosity Liquids	yes	no
Pumping of Suspensions, Sludges and Particles	yes	yes
Self-Priming	yes	no
Shearing Forces	moderate	low
Siphoning Effect When Pump Is Stopped	yes	yes
Suction Lift	dry: ~1.52 m (5 ft) wet: ~3.96 m (13 ft)	n/a