ARO®

ARO[®] Air Operated Diaphragm Pump Competitive Zone

vs Progressive Cavity Pumps



ARO[®] diaphragm pump advantages include:

- Ability to run dry
- Easily pump wide range of fluids (viscosity, abrasives in suspension)
- Lower maintenance costs (time & materials)
- No dynamic seals to leak / maintain
- Broad chemical compatibility
- Smaller footprint / size / weight



Target Progressive Cavity Pump Applications:

- Processes that may run dry
- Transfer of fluids with abrasives in suspension
- Highly acidic / basic fluids
- Low viscosity fluids
- Hazardous applications

$\mathbf{\hat{O}}$	Most Favorable	AR0°	PROGRESSIVE CAVITY
	Initial Purchase Cost		\bigcirc
	Maintenance Cost	$\mathbf{\bigcirc}$	V
>.	Ease of Service	$\mathbf{\bigcirc}$	\bigcirc
	Pulsation	V	$\mathbf{\bigcirc}$
Ŵ	Control Features	¢	\bigcirc
	Size	$\mathbf{\bigcirc}$	
冱	Chemical Compatibility	$\mathbf{\bigcirc}$	V
	Abrasives	$\mathbf{\bigcirc}$	\bigcirc
	Low Fluid Shear	$\mathbf{\bigcirc}$	$\mathbf{\bigcirc}$
ŝ	Stall Capability	$\mathbf{\hat{O}}$	
(1	Run Dry	$\mathbf{\bigcirc}$	V
S	Rotating Seals	Δ	

ARO® AODD PUMP ADVANTAGE	PROGRESSIVE CAVITY
Can run dry indefinitely	Running dry for less than a minute will destroy stator
Simple pump selection (Pressure/Flow/Chem Comp)	Complex pump selection process
Easily deadhead / stall with no additional equipment	Deadhead / stall causes severe damage
Easily handle all fluids with abrasives	Abrasive containing fluid can quickly cause failure
No spinning shaft seals/alignment necessary	Shaft alignment difficult to maintain
No product contamination possible	May contaminate product





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ARO[®] air operated diaphragm pumps can easily handle processes where fluid contains abrasives or could run dry. Maintenance for an ARO[®] air operated diaphragm pump is simple, fast, and inexpensive when compared to progressive cavity pumps.

Potential customer Progressive Cavity pump problems:

- Run dry will quickly destroy expensive stators and rotors
- Frequently replacing stators due to running dry or abrasive fluids
- Expensive maintenance parts
- Typical maintenance may require two people 4-6 hours
- Shaft seal failures / alignment problems (vibration)
- Deadhead or stall can damage the pump or system



Key tips to EXP diaphragm pump technology:

Reliability

Quick Dump[™] Checks - Reduces downtime by eliminating pump ice-up SimulShift[™] Valve - Provides an ultra-positive, reliable shift signal that avoids stall-out Unbalanced Major Air Valve - Eliminates valve centering and pump stall-out even under low air inlet pressure

Efficiency

Positive Seal, Ceramic "D" Valve - No energy wasted during pump idle, ensures optimum energy efficiency while avoiding costly air "blow-by"

Serviceability

Simplified Major Air Valve Block - Easy to access, simple to service and lube free

Control and Monitoring

Automation Ready - Enhanced with Electronic Interface Capability providing accurate, electronically controlled dosing

- Available for use in hazardous duty environments
- Leak detection option detects diaphragm failure to help reduce costly production downtime
- Compatible with almost any automation system
- Internal cycle sensor and end-of-stroke signals has ability to gather feedback and pump data

UNBALANCED AIR VALVE

"D" VALVE

OUICK DUMP™ CHECK

SIMULSHIFT™ VALVE