Heavy Duty Chemical Processing Pump

Model A9
A Legacy of Continuous Innovation

Arthur Redman Wilfley was an inventor and entrepreneur, whose sheer hard work and determination fueled the prosperity of his lead and silver mine near Leadville, Colorado in the late 19th century. His interest in centrifugal pumps arose as he applied his ingenuity towards solving the hardships of pumping slurries in the mine, in the form of the first packingless pump.

Wilfley’s first commercially available pump was sold in 1919 and was built around his ingenious concept of utilizing an expeller to generate a dynamic, centrifugal seal. He continued to perfect the expeller design and received a patent in 1920. The dynamic seal continues to be the unique hallmark of Wilfley pumps.

From Slurries to Chemicals

As the Wilfley expeller was being quickly adopted in the mining industry, a similar need was noted in the chemical processing marketplace. Although most chemicals were free of solids, the flushed packing seals of the era significantly diluted the product.

After numerous tests and engineering innovations, the Wilfley Model AB chemical pump was developed using the company’s expeller sealing technology and enjoyed great success. Since the 1933 launch of the Model AB, Wilfley’s culture of continuous improvement led to the achievement of significant milestones in chemical pumping with the AC and AF models.

The Chemical Industry Unites

Not long after the advent of the American Voluntary Standard (AVS), a dimensional envelope and performance standard was developed in the form of the ANSI B73.1 specification. In response, Wilfley developed the Model AG in 1973 to incorporate the many benefits of an expeller seal with the core tenets of the new standard: adjustable impeller, back pull-out capability and dimensional interchangeability.

As air emission requirements became more stringent, Wilfley responded with the Model A7, building upon the success of its predecessors by increasing operating efficiencies and intrinsic safety with sealing redundancy.

The most highly developed Wilfley chemical pump is now available with the Model A9, including expanded hydraulics, increased power capabilities, improved dynamic sealing and the most reliable static seal available. It is conservatively designed and robustly constructed to offer high reliability in the most difficult applications.
Wilfley Dynamic Seal

Features and Benefits:

- Increases production by reducing down time
- A cost effective solution that can easily be rebuilt on-site
- Excellent solids/slurry handling capabilities
- Effectively manages crystallizing and scaling fluids
- No mechanical seal and associated flush system required
- Inherently safe without gland packing or frictional heat
- No dilution of your pumped product
- Operational abuse tolerant, e.g. cavitation and vibration
- Dry running capability
- Single source pump & seal responsibility

How the Wilfley Dynamic Seal works:

- An air barrier (A) is established during pump operation by centrifugal forces generated at the expeller.
- This air barrier successfully isolates the pumped fluid from the shaft.
- The DryLock II™ seal provides positive sealing at pump startup and shutdown

Scan this code with your smartphone to view an animation on the Dynamic Seal
Wilfley Model A9 Features and Benefits

- Easy clearance adjustments via external adjustment bolts
- 303SS labyrinth oil seals to prevent contamination
- Expeller/Seal flush capability
- Convenient Lifting point
- Large sight glasses on both sides to verify oil level
- Opti-expeller™ provides cutting edge dynamic sealing with zero operational leakage
- DryLock II™ seal engineered for reliable static sealing and available in a variety of material combinations
- Robust shaft design minimizes deflections at seal faces for maximum seal life and reliability
- Comprehensive hydraulics available to meet your needs
- Heavy duty case design with 150 lb. (PN 20) flanges and 300 lb. (PN 50) flanges and comparable DIN flanges also available
- Case drain option available
- Extreme duty bearings available for severe applications
- Frame bracket designed to protect bearing unit from pumpage (available in duplex stainless steel)
How the DryLock II™ Seal works:

1. Balls centrifugally move outward as the pump starts up
2. Balls push actuator plate to open seal components
3. Isolated spring forces seal components to close as the pump shuts down

Seal flush capability when required (startup/shutdown)
Seal adjustment ring offers easy adjustment to precisely set the seal opening
0.020” (0.5mm) seal face opening
Shaft sleeve positively isolates the shaft from the pumpage
Rotary and stationary seal components are available in a variety of materials
Expeller cavity drain option available

Quantity of balls used varies with pump speed to precisely control seal operation
Containment bushing for tertiary safety
Model A9 Pump Capacities

Black = USGPM & feet
Red = m³/hr & meters
* Limited to 3000 RPM
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