EMW® Heavy Duty Slurry Pump

A Legacy of Continuous Innovation

Arthur Redman (A.R.) Wilfley was an inventor and entrepreneur, whose sheer hard work and determination fueled the prosperity of his silver and lead mine near Leadville, Colorado in the late 19th century. Interest in centrifugal pumps arose as he applied ingenuity toward solving the hardships of pumping slurries in his mine, resulting in the first packing-less 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) shaft 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.

The Path to Pumps

Wilfley pumps were borne from the needs of a miner and inventor. Bearing our founder’s name, the Wilfley Concentrating Table revolutionized the worldwide mining industry and is still manufactured today. Following on the heels of that early invention were a roasting furnace, gravity slime table and the previously described packing-less pump that became the cornerstone of A.R. Wilfley and Sons, Inc.

It did not take long for the Company’s first slurry pump model to be recognized by mining companies outside of the United States and it was exported for a major project in Chile, South America in November of 1921. From those humble roots, the company quickly grew and expanded to incorporate the dynamic sealing principle within chemical as well as slurry centrifugal pumps.

Today’s Solutions

Direct descendants of A.R. Wilfley’s original slurry pump are still manufactured today and successfully used throughout the world. In response to customer requests, however, EMW® pumps were developed to complement other Wilfley products and represent our latest solution for the slurry pump marketplace.

EMW® is organized to be a comprehensive end-suction centrifugal pump product line configured in both hard iron and replaceable elastomer liner designs. Utilizing the most current hydraulic design tools and materials’ advancements, EMW® delivers best-in-class operational performance and maintenance ease meeting today’s most stringent requirements. Consistent with our history, count on Wilfley Pumps to advance further in anticipation of our customers’ ever changing needs.

EMW® is a licensed trademark of EMW Design Limited-Ireland. EMW® products are manufactured by A.R. Wilfley & Sons, Inc.
Materials’ development was important to our founder, A.R. Wilfley, and remains a core competency of the A.R. Wilfley and Sons, Inc. business today. In the face of an eighty percent reduction in the number of foundries located in North America, we are committed to actively expanding upon the viability of our low volume-highly flexible foundry in Colorado. To that end, consistent capital investments have been made over the years to improve operational capabilities, efficiency, quality and planning at the foundry.

Ownership of a foundry offers us the ability to quickly respond to special customer needs as well as providing a reliable platform for research and development activities with metals. Wilfley scientists and engineers have developed numerous proprietary materials and processes to meet demanding pump application needs with hard iron and alloy steel metallurgies. Prominent among that portfolio are MAXALLOY® high-chrome iron materials that are specifically designed to address the needs of slurry pumps.

Correspondingly, the standard material of choice for our EMW® metal configuration pump is MAXALLOY® 5A which provides unparalleled wear and corrosion resistance to meet the most demanding slurry handling needs.

The table below identifies standard materials of construction for major components within EMW® pumps. Faithful to our legacy of INNOVATIVE CENTRIFUGAL PUMP SOLUTIONS SINCE 1919, we are committed to proactively assessing the optimum choice of materials and will adapt our solution to meet your most challenging slurry handling duties.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Components</th>
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<tbody>
<tr>
<td></td>
<td>Casing</td>
</tr>
<tr>
<td>Metal</td>
<td>High Chrome Iron¹</td>
</tr>
<tr>
<td>Lined</td>
<td>Ductile Iron</td>
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</table>

¹Proprietary material MAXALLOY® 5A
²Contact factory for elastomer alternatives
³Optional material MAXALLOY® 5A (high chrome iron)
⁴Optional alloy materials
**Power End**

1. Grease lubricated power end configuration shown (oil lubricated option available)
2. Clearances can be easily adjusted to maintain efficiency while optimizing performance and extending wear life
3. Over-sized, self-aligning spherical roller bearings for trouble free operation
4. Labyrinth bearing isolators to protect internal components during wash-down cycles

50,000 hour minimum L10 bearing life

Distortion free bearing clamp system ensures maximum bearing life and prevents premature fatigue (not shown)

**Sealing**

5. Packed gland with expeller configuration shown (other sealing options available - see page 5)
6. Split stuffing box for simplified installation and adjustments
7. Mating shaft sleeves with engineered materials for extended life

**Wet End**

8. Maintenance friendly split casing for elastomer liners (lined wet end)
9. Static vanes reduce wear and prevent erosion
10. Tangential discharge improves efficiency and reduces wear
11. Optimized hydraulics for high efficiency and low wear
12. Dowel pins for easy and accurate split case alignment (lined wet end)
13. Ribs designed for optimized strength/weight
14. Static suction vanes extend wear life (metal wet end)
15. Patented flange system for ease of maintenance (metal wet end)

Adjustable suction cover on sizes 200 and larger to optimize efficiency and minimize wear (not shown)

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**THE EMW® HEAVY DUTY SLURRY PUMP**

Designed for Class III and IV services, H.I. Standard 12.1-12.6 (2011)
Seal Options

Packed Box Arrangement
- Grease and liquid lubricated configurations
- Optional gland flushing arrangements to optimize seal water supply and product dilution requirements

Dynamic (Centrifugal) Seal Option - see page 4
- Supplementary expeller generates high head to overcome normal suction conditions
- Extend packing life by restricting the presence of solids at the shaft

Mechanical Seal Arrangement
- Cartridge style mechanical seals to simplify maintenance by negating seal settings
- Generous mechanical seal gland sizes to accept nearly all seal manufacturers’ designs
- Single and double configurations to focus on environmental and process needs
- Flushed and non-flushed primary seal arrangements to promote optimized reliability

EMW® pump with overhead assembly
Metal Pump Dimensions

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<tr>
<th>Size</th>
<th>Suction Flange ¹</th>
<th>Discharge Flange ¹</th>
<th>CP</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>L</th>
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Lined Pump Dimensions

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¹Dimensions in millimeters (inches)
²ASME/ANSI & ISO/DIN Flanges available
³ISO/DIN Flanges available

Not for construction
VISIT

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TO SEE OUR FULL RANGE OF PUMPING SOLUTIONS

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