

DUALPAC™ 2211 SEVERE SLURRY PACKING

INNOVATIVE PACKING TECHNOLOGY FOR SEVERE APPLICATIONS



Achieve Longer Life with Innovative Packing Technology

Advantages

- Achieves significantly longer packing life using patent pending DualPac™ braiding technology
 - The low friction and high sealability of PTFE, without the consolidation and extrusion
 - The strength and resiliency of aramids, without the shaft wear
 - Fewer gland adjustments translates to longer life
- Multiple configurations to eliminate the need for end rings
 - Simplifies inventory by using the same packing for end and sealing rings
 - 50% less aramid contacting the shaft as compared to traditional end rings, resulting in no/minimal shaft wear
- Exclusive design using DualPac Technology
 - Requires less maintenance
 - Expands easily under gland load
 - Breaks in quickly



DUALPAC™ 2211 SEVERE SLURRY PACKING

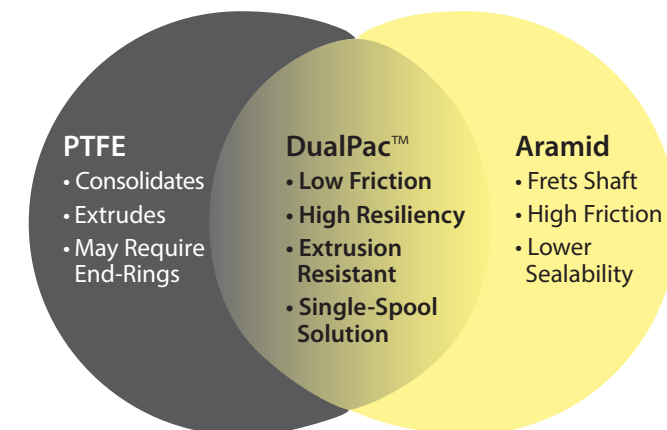
Until now selecting the correct packing for your application has required a balancing act between different materials. Aramids are tough and resilient but have high friction and fret shafts and sleeves; PTFEs are extremely low friction and kind to shafts but can consolidate and extrude. All of these issues cause a loss of compression, resulting in leakage and requiring frequent packing adjustments.

Chesterton® DualPac 2211 is built to address these issues by combining two complimentary materials in one packing. Using our patent pending braiding technology, we place graphite filled ePTFE against the shaft where it provides superior sealing and low friction; we place a high-strength and resilient aramid against the stuffing box bore, to resist consolidation without shaft wear. Both lab and field tests have shown that DualPac requires fewer gland adjustments, resulting in drastically extended life in severe service applications.



DualPac™ 2211 Packing

All the benefits of both fibers, none of the drawbacks



Innovative Packing Technology



DualPac™ Technology

Since its founding in 1884, Chesterton has been at the forefront of packing innovation, but braiding has remained largely unchanged since the invention of the interbraid. With the first packing breakthrough in decades, Chesterton has innovated braiding with its patent pending DualPac technology.

Starting with an idea to combine materials in a new way to take advantage of their unique properties, Chesterton engineers designed and built a customized braiding machine. This DualPac Technology creates the one-of-a-kind construction of 2211. DualPac 2211 combines two materials in a unique way allowing easier expansion under gland load, creating better shaft contact, and increasing leak control with fewer adjustments—even in worn equipment.

Aramid

- Stronger than steel, it is ideal for resisting extrusion and abrasion
- Extremely resilient, it will continue to provide load on the ePTFE material

Graphite-filled ePTFE (placed against the shaft)

- Extremely low friction for less heat generation and lower power consumption
- Gentle on shafts and sleeves
- Graphite fill increases heat conductivity to run cooler and resist glazing



Multiple Configurations, Reduce Inventory Complexity

With DualPac™ technology, you can configure the packing to your specific application. When dealing with aggressive solids or extrusion place the tougher, extrusion-resistant aramid against the bottom or top of the stuffing box. This eliminates the need for stocking a separate packing style to use as end rings in the stuffing box.

While the use of an aramid as an end ring is often necessary, it can result in shaft or sleeve wear. With DualPac 2211 configured with the aramid against the bottom of the stuffing box, you get the same resistance to extrusion and solids with minimal contact between the aramid and shaft, reducing wear and increasing uptime.

Figure 1 – Rings Oriented for Sealing to Deliver:

- Maximum sealing capability
- Low-to-no shaft wear
- A configuration optimal for clean fluid or light abrasives

Figure 2 – Rings Oriented for Solids Resistance and Anti-Extrusion to Provide:

- Resistance to solids and extrusion through utilization of aramid
- Single-spool solution for both end and middle rings
- Minimal aramid-to-shaft contact to prevent shaft wear

Figure 3 – Chesterton DualPac SuperSet™ to Offer:

- DualPac sealing capabilities with the advanced design of the SpiralTrac™ environmental controller
- A patented SpiralTrac grooving system that hydrodynamically pumps the solids out of the stuffing box and back out into the pump casing
- Increased packing life with dramatically reduced flush rates

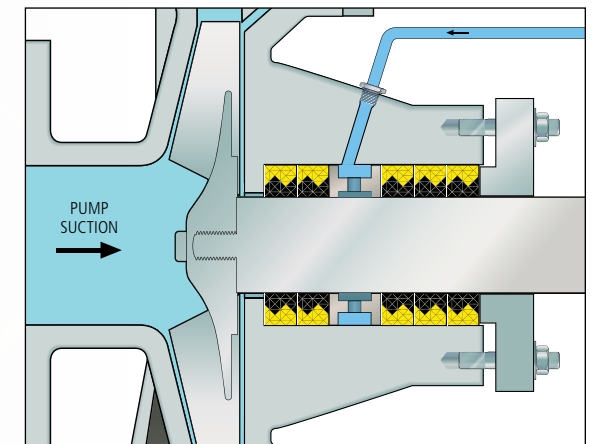


FIGURE 1 – All Rings Oriented for Sealing

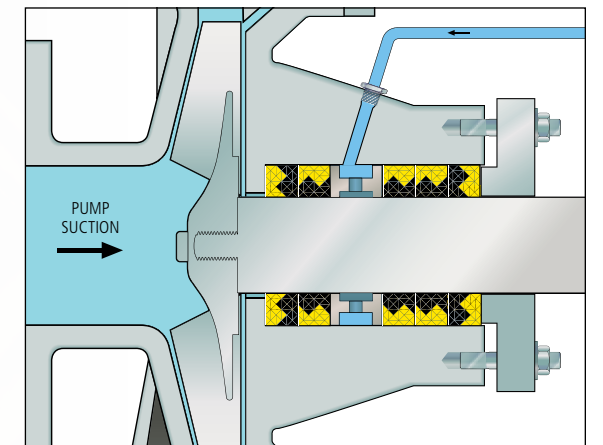


FIGURE 2 – Solids Resistance and Anti-Extrusion

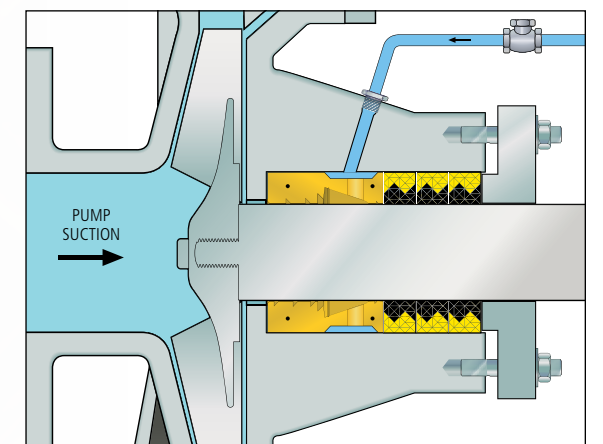


FIGURE 3 – Chesterton DualPac SuperSet

Longer Packing Life, Lower Cost of Ownership



PROVEN PERFORMANCE

Both laboratory and field testing have shown that DualPac™ 2211 requires fewer gland adjustments, leading to both a faster break-in and a longer life. When compared to three similar packing configurations, in all cases the DualPac 2211 required 80% fewer adjustments and achieved 90% less leakage. This demonstrates that DualPac 2211 is able to harness the strengths of the two fibers in a way that you cannot recreate with other constructions or configurations.



Technical Parameters

Speed	10 m/s (2000 fpm)
Temperature	260°C (500°F)
Pressure	20 bar g (300 psi)
pH	4-11



Fewer Gland Adjustments

The aramid yarn's high resiliency prevents loss of load through consolidation or extrusion. When the gland bottoms out against the stuffing box, leakage cannot be controlled and the packing must be replaced. Fewer adjustments will delay bottoming out, significantly increasing the life of the packing.

Lower Leakage

The conformability of the ePTFE creates a tight seal against the shaft, which is maintained through the use of resilient aramid yarn. Lower leakage means less product loss, less maintenance required to clean leaked fluid, and safer operating environments.

Lower Power Consumption

The extreme low friction of ePTFE, combined with high-quality lubricants, results in lower power consumption. This will save energy and money over the life of the packing.

Packing Configurations

Packing A - Graphite filled ePTFE middle rings with aramid yarn end rings

Packing B - Graphite filled ePTFE wrapped aramid fibers

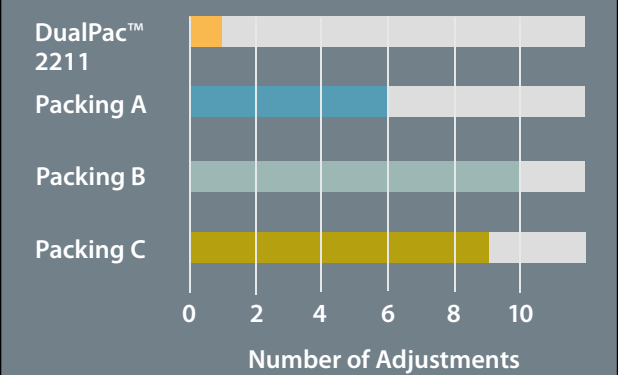
Packing C - Graphite filled ePTFE with aramid reinforced corners

Testing Parameters

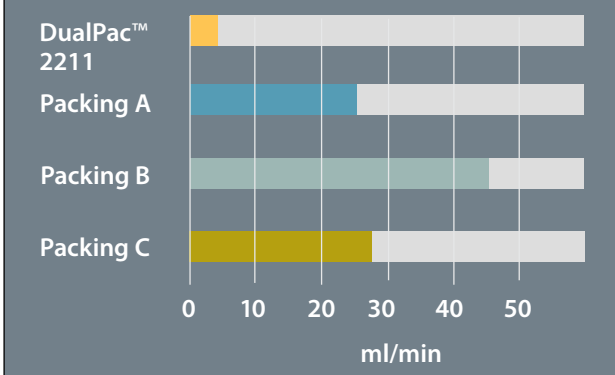
Results are an average of two tests with the following:

- 72 hours
- 1725 RPM
- 12.7 mm (0.5") cross section packing
- 76.2 mm (3") shaft
- 2.1 bar g (30 psig)
- 4 ring set

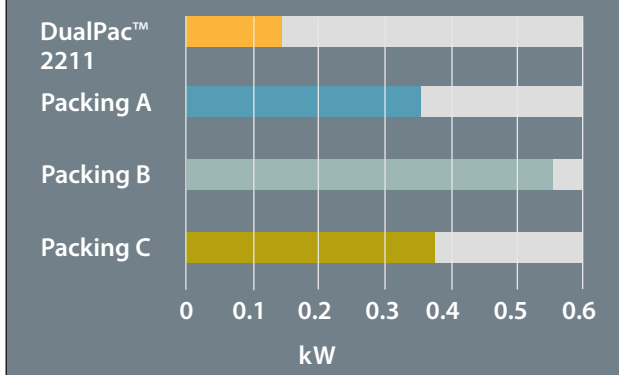
Gland Adjustments



Leakage



Power Consumption





Global Solutions, Local Service

Since its founding in 1884, the A.W. Chesterton Company has successfully met the critical needs of its diverse customer base. Today, as always, customers count on Chesterton solutions to increase equipment reliability, optimize energy consumption, and provide local technical support and service wherever they are in the world.

Chesterton's global capabilities include:

- Servicing plants in over 100 countries
- Global manufacturing operations
- More than 500 Service Centers and Sales Offices worldwide
- Over 1200 trained local Service Specialists and Technicians

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A.W. Chesterton Company
860 Salem Street
Groveland, MA 01834 USA

Telephone: 781-438-7000
Fax: 978-469-6528
www.chesterton.com

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