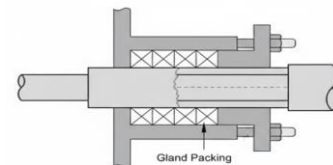
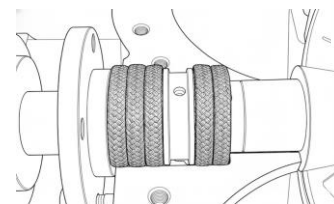




GLAND PACKAGING

PRODUCT RANGE GUIDE



GLAND PACKAGING



GLAND PACKING/COMPRESSION PACKING

Gland packing, or compression packing, is braided sealing material used to reduce leakage between housings and moving parts in rotating and piston equipment like glands, valves, and pumps. Made from materials such as polyacrylic fibre, graphite, or PTFE, it offers excellent chemical resistance and suits various industrial applications depending on the braiding method and material.

WHAT IS GLAND PACKING MADE FROM?

Gland Packing is manufactured from high-performance materials such as exfoliated graphite, polyacrylic (ACM) fibre, and PTFE/graphite blends. The precision braiding process produces a dense yet flexible packing that maintains consistent shape and performance under varying temperatures, pressures, and shaft speeds. With excellent dimensional stability and strong extrusion resistance, these packings are well-suited for demanding, high-stress applications, including piston pumps and other critical rotating equipment.

WHAT ARE THE KEY APPLICATIONS FOR GLAND PACKING?

Compression packings are widely used across industries for sealing valves and pumps in diverse applications. They provide a non-contaminating, low-friction, and self-lubricating seal that ensures consistent and reliable performance. Common industries and applications include:

- **Chemical processing** – resistant to aggressive chemicals and acids.
- **Food and beverage production** – safe for contact with consumable products.
- **Pharmaceuticals and healthcare** – maintains hygiene and prevents contamination.
- **Mining and metals** – durable under abrasive and high-stress conditions.
- **Water Treatment & Distribution** – ideal for pumps, valves, and systems.



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GLAND PACKAGING RANGE



GRAPHITE series

Graphite Gland Packing is a high-performance gland packing, braided from pure expanded graphite. This advanced composition enhances its strength, elasticity, and resilience, making it ideal for high-pressure and high-temperature sealing applications. Manufactured using cutting-edge technology, this material delivers consistent quality and long-lasting performance.



POLYACRYLIC (ACM) series

Polyacrylic Gland Packing is a high-performance gland packing, expertly braided from premium Polyacrylic fibres and treated with specialised lubricants and blocking agents. This advanced construction enhances its strength, dimensional stability, and resistance to wear, ensuring dependable sealing performance in dynamic and rotary applications. Manufactured using advanced braiding technology, this material offers consistent quality, reduced friction, and extended operational life across a wide range of industrial environments.



PTFE/GRAPHITE series

PTFE/Graphite Gland Packing is a high-performance gland packing, expertly braided from high-quality PTFE fibres blended with graphite particles and treated with specialised lubricants. This advanced composition enhances its thermal conductivity, chemical resistance, and self-lubricating properties, ensuring reliable sealing performance under demanding operating conditions. Manufactured using advanced braiding technology, this material delivers consistent quality, reduced friction, and extended service life in both rotary and reciprocating equipment.



PTFE series

PTFE Gland Packing is a high-performance sealing solution, precision-braided from pure, high-quality PTFE (polytetrafluoroethylene) fibres and treated with specialised lubricants. This advanced construction delivers exceptional chemical resistance, ultra-low friction, and outstanding non-stick properties. Manufactured using modern braiding technology, it ensures consistent density, dimensional stability, and long-term sealing reliability in both rotary and reciprocating equipment. This material is particularly suited to applications where chemical compatibility and product purity are critical.



GLAND PACKAGING COMPARISON



Material	Material Suitability	Min. Temperature (°C)	Max. Temperature (°C)	Maximum Pressure for Rotary Pump (Kpa)	Maximum Pressure for Piston Pump (Kpa)	Maximum Pressure (Kpa)
Graphite	Best suited for high-temperature and high-pressure applications. Offers strong resilience and long service life where heat resistance is important.	-240	650	3000	20000	30000
Polyacrylic (ACM)	Designed for general industrial use, especially where wear resistance, dimensional stability, and reduced friction are needed. More fibre-based than the graphite or PTFE options.	-50	200	2000	2000	5000
PTFE/Graphite	Combines PTFE chemical resistance with graphite thermal conductivity and lubrication. A good option where both chemical resistance and heat dissipation are required.	-100	280	3200	8500	25000
PTFE	Best for chemical compatibility, low friction, and product purity. More chemically inert than the others, but does not offer the same graphite-based thermal conductivity as PTFE/Graphite.	-200	280	3000	3000	25000



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GLAND PACKAGING GRAPHITE SERIES



GRAPHITE GLAND PACKING

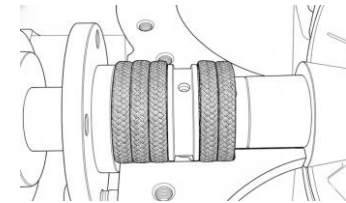


PRODUCT DESCRIPTION

Graphite Gland Packing is a high-performance gland packing, braided from pure expanded graphite. This advanced composition enhances its strength, elasticity, and resilience, making it ideal for high-pressure and high-temperature sealing applications. Manufactured using cutting-edge technology, P320G delivers consistent quality and long-lasting performance.

APPLICATIONS

- **Petrochemical & Refining** – Reliable sealing for aggressive media.
- **Energy & Power Plants** – Ideal for steam and high-temperature applications.
- **Chemical Processing** – Ensures environmental safety and compliance.
- With its robust mechanical properties, superior sealing efficiency, and extended lifespan, Graphite is the optimal choice for critical industrial insulation and sealing requirements.



FEATURES

- **Exceptional Strength & Flexibility** – Reinforced with glass fiber for superior durability in demanding conditions.
- **High-Temperature & Pressure Resistance** – Withstands up to 300 bar and peripheral speeds of 20 m/s.
- **Long Service Life** – Minimizes maintenance downtime, offering a cost-effective and eco friendly solution.

Article No	Section (mm)	Min. Temperature (°C)	Max. Temperature (°C)	Thickness (mm)	Maximum Pressure for Rotary Pump (Kpa)	Maximum Pressure for Piston Pump (Kpa)
606569	3.2	-240	650	3.2	3000	20000
606570	5	-240	650	5	3000	20000
606571	6.5	-240	650	6.5	3000	20000
606572	8	-240	650	8	3000	20000
606573	9.5	-240	650	9.5	3000	20000
606565	11	-240	650	11	3000	20000
606566	12.5	-240	650	12.5	3000	20000
606567	14	-240	650	14	3000	20000
606568	16	-240	650	16	3000	20000



GLAND PACKAGING POLYACRYLIC (ACM) SERIES



POLYACRYLIC (ACM) GLAND PACKING

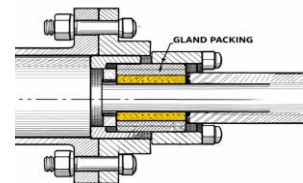


PRODUCT DESCRIPTION

Polyacrylic is a high-performance gland packing material, expertly braided from premium polyacrylic fibers and treated with specialised lubricants and blocking agents. This advanced construction enhances its strength, dimensional stability, and resistance to wear, ensuring dependable sealing performance in dynamic and rotary applications. Manufactured using advanced braiding technology, Polyacrylic offers consistent quality, reduced friction, and extended operational life across a wide range of industrial environments.

APPLICATIONS

- **Water Treatment & Distribution** – Reliable sealing for clean and contaminated water systems
- **Pulp & Paper Industry** – Ideal for pumps handling abrasive slurries and fibrous materials
- **General Industrial Equipment** – Suitable for pumps, mixers, and agitators in multiple process industries.
- With its excellent abrasion resistance, reliable sealing capability, and durability, Polyacrylic is a robust solution for general-purpose sealing in moderate pressure and moderate temperature applications.



FEATURES

- **Exceptional Abrasion Resistance** – Polyacrylic fibers provide enhanced durability against abrasive media.
- **Low Friction Performance** – Treated with lubricants to reduce shaft wear and improve efficiency.
- **Reliable and Cost Effective** – Ensures consistent sealing performance with reduced maintenance requirements.

Article No	Section (mm)	Min. Temperature (°C)	Max. Temperature (°C)	Thickness (mm)	Maximum Pressure for Rotary Pump (Kpa)	Maximum Pressure for Piston Pump (Kpa)
606578	3.2	-50	200	3.2	2000	2000
606580	5	-50	200	5	2000	2000
606581	6.5	-50	200	6.5	2000	2000
606582	8	-50	200	8	2000	2000
606583	9.5	-50	200	9.5	2000	2000
606574	11	-50	200	11	2000	2000
606575	12.5	-50	200	12.5	2000	2000
606576	14	-50	200	14	2000	2000
606577	16	-50	200	16	2000	2000



GLAND PACKAGING PTFE/GRAPHITE SERIES



PTFE/GRAPHITE GLAND PACKING

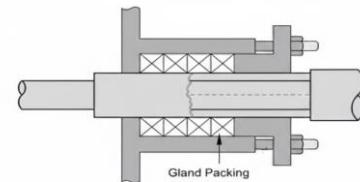


PRODUCT DESCRIPTION

PTFE/Graphite Gland Packing is a high-performance gland packing, expertly braided from high-quality PTFE fibers blended with graphite particles and treated with specialised lubricants. This advanced composition enhances its thermal conductivity, chemical resistance, and self-lubricating properties, ensuring reliable sealing performance under demanding operating conditions. Manufactured using advanced braiding technology, PTFE/Graphite material delivers consistent quality, reduced friction, and extended service life in both rotary and reciprocating equipment.

APPLICATIONS

- **Petrochemical & Refining** – Reliable sealing for hydrocarbon transfer pumps, solvent handling systems, and refinery valve stems operating under elevated temperatures.
- **Power Generation** – Ideal for boiler feedwater pumps, condensate systems, and auxiliary high-speed rotary equipment requiring effective heat dissipation.
- **Pharmaceutical & Food Processing** – Suitable for pumps, mixers, and agitators handling sensitive or reactive fluids where chemical inertness and non-contamination are essential, for FDA approved Gland Packing please refer to the 'PTFE Series'.
- With its excellent chemical resistance, enhanced thermal conductivity, and low-friction performance, PTFE/Graphite gland packing is a dependable solution for demanding industrial sealing applications.



FEATURES

- **Superior Chemical Resistance** – PTFE and graphite construction ensures compatibility with a wide range of aggressive media.
- **Excellent Thermal Conductivity** – Graphite enhances heat dissipation, improving performance and longevity.
- **Low Friction & Extended Service Life** – Self-lubricating design reduces shaft wear and minimises maintenance requirements.

Article No	Section (mm)	Min. Temperature (°C)	Max. Temperature (°C)	Thickness (mm)	Maximum Pressure for Rotary Pump (Kpa)	Maximum Pressure for Piston Pump (Kpa)
606560	3	-100	280	3	3200	8500
606561	5	-100	280	5	3200	8500
606562	6.5	-100	280	6.5	3200	8500
606564	8	-100	280	8	3200	8500
606554	10	-100	280	10	3200	8500
606555	12.5	-100	280	12.5	3200	8500
606556	14	-100	280	14	3200	8500
606558	16	-100	280	16	3200	8500
606559	20	-100	280	20	3200	8500



GLAND PACKAGING PTFE SERIES



PTFE GLAND PACKING

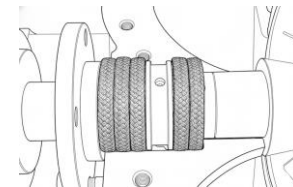


PRODUCT DESCRIPTION

PTFE gland Packing is a high-performance sealing solution, precision-braided from pure, high-quality PTFE (polytetrafluoroethylene) fibres and treated with specialised lubricants. This advanced construction delivers exceptional chemical resistance, ultra-low friction, and outstanding non-stick properties. Manufactured using modern braiding technology, it ensures consistent density, dimensional stability, and long-term sealing reliability in both rotary and reciprocating equipment. PTFE gland packing is particularly suited to applications where chemical compatibility is required, product purity is critical and FDA approval is required.

APPLICATIONS

- **Chemical Processing** – Ideal for pumps, valves, mixers, and agitators handling aggressive acids, alkalis, solvents, and corrosive chemicals.
- **Water & Wastewater Treatment** – Reliable sealing for pumps and valve stems in systems exposed to treated water, effluent, and chemical dosing applications.
- **General Industrial Services** – Effective in rotary and reciprocating equipment operating with low to moderate pressures and speeds across a broad temperature range.
- With its superior chemical inertness, low coefficient of friction, and non-contaminating properties, PTFE gland packing is a dependable and versatile solution for demanding sealing environments.
- **Food Processing Applications** – FDA approved PTFE material makes this gland packing series suitable for use in food processing environments where product safe contact with food and non-contaminating sealing performance are essential.



FEATURES

- **FDA Approval** – Confirms the PTFE material meets recognised food-contact requirements, providing assurance of cleanliness, material safety, and suitability for use where strict hygiene standards must be maintained.
- **Outstanding Chemical Resistance** – Pure PTFE construction ensures compatibility with a wide range of aggressive and corrosive media.
- **Low Friction Performance** – Naturally self-lubricating material reduces shaft wear and minimises heat generation.
- **Reduced Maintenance Requirements** – Smooth operation and minimal wear contribute to extended service life and lower downtime.

Article No	Section (mm)	Min. Temperature (°C)	Max. Temperature (°C)	Thickness (mm)	Maximum Pressure for Rotary Pump (Kpa)	Maximum Pressure for Piston Pump (Kpa)
606551	5	-200	280	5	3000	3000
606552	6.5	-200	280	6.5	3000	3000
606553	8	-200	650	8	3000	3000
606546	10	-200	280	10	3000	3000
606547	12.5	-200	280	12.5	3000	3000
606548	14	-200	280	14	3000	3000
606549	16	-200	280	16	3000	3000
606550	20	-200	280	20	3000	3000

GLAND PACKAGING INSTALLATION GUIDE



INSTALLATION GUIDE FOR RS PRO GLAND PACKING IN PUMPS AND VALVES



1. General Requirements

1.1. Preparation

Before installation, thoroughly clean the stuffing box and pump shaft, ensuring all remnants of old packing are removed. A packing extractor, such as the RS PRO Extraction Tool, can be used for this purpose. Any leftover packing material can negatively impact the performance of the new set.

1.2. Stuffing Box Requirements

- Radial shaft movement: < 0.003 of the valve diameter
- Shaft surface roughness: $R_a \leq 1.25 \mu\text{m}$
- Stuffing box inner surface roughness: $R_a \leq 16 \mu\text{m}$
- Clearance between the stuffing box bottom and shaft or stem: < 0.03 of the packing dimension

1.3. Selecting and Cutting the Packing

Choose the appropriate RS PRO Gland Packing that matches the stuffing box dimensions. To achieve the correct packing length, use a cutting device like the RS PRO Cutting Tool, which ensures precise cuts at a 45° angle.

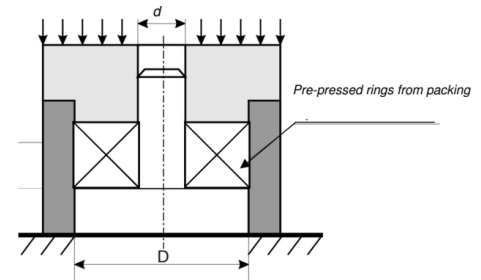
1.4. Pre-Pressing the Rings

We recommend pre-pressing the cut rings in a mold matching the stuffing box dimensions. This step is especially important when the packing section exceeds the valve diameter.

Mold Parameters:

- D – Stuffing box diameter
- d – Shaft diameter
- H – Ring height
(recommended to be at least 1 mm less than the unpressed packing section)

For installation, use a cut bushing to guide the rings smoothly into position. Each ring joint must be offset at a 90° angle from the previous one.



GLAND PACKAGING INSTALLATION GUIDE



INSTALLATION GUIDE FOR RS PRO GLAND PACKING IN PUMPS AND VALVES



2. Installation in Pumps

2.1. Compression Packing in Centrifugal Pumps

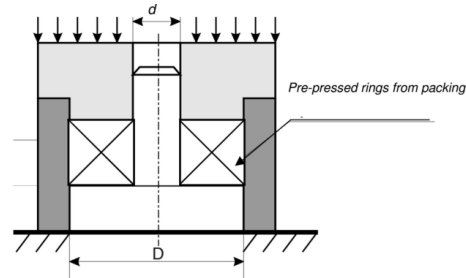
When installing RS PRO Gland Packing in centrifugal pumps, apply pressure using the stuffing bushing. The packing pressure should be 1.05 to 2 times the pressure of the sealed fluid, with a minimum packing pressure of 0.5 - 1.5 N/mm². Once the final ring is installed, place the gland and tighten the bolts manually. Start the pump and gradually tighten the bolts until leakage is reduced to an acceptable, uniform level. Do not completely eliminate leakage, as this could cause overheating and damage to the packing. Pumps without leakage must have a dedicated stuffing box cooling system.

2.2. Cooling System Considerations

If a cooling system is used, ensure it is functioning correctly before starting the pump.

2.3. Separator Placement

When a separator is used, position it correctly so that when tightened, it aligns with the inlet of the lubricating fluid.



GLAND PACKAGING INSTALLATION GUIDE



INSTALLATION GUIDE FOR RS PRO GLAND PACKING IN PUMPS AND VALVES

3. Installation in Valves

3.1. Preparation

Follow the cleaning, roughness, and clearance requirements outlined in Sections 1.1 to 1.4.

3.2. Gland Pressure Calculation

The required gland pressure (P_c) can be determined using the formula:

$$P_c = n \times P_p \times e^{(2f \cdot h/s)}$$

Where:

- n – Proportion coefficient (1.4 - 1.6)
- P_p – Sealed fluid pressure (MPa)
- $f = \mu/n$ (where μ is the friction coefficient between the shaft and packing, and between packing and stuffing box wall, ranging from 0.03 to 0.05)
- h – Stuffing box depth (mm)
- s – Packing section (mm)

The tightening force (Q_c) required for the gland is:

$$Q_c = (\pi/4) \times (D^2 - d^2) \times P_c \text{ (N)}$$

Where:

- D – Inside stuffing box diameter (mm)
- d – Shaft diameter (mm)

Using the calculated force and valve construction parameters (stud count, diameter, etc.), determine the appropriate torque for tightening the studs. Use a torque wrench for even tightening, alternating between clockwise and counterclockwise directions. Avoid over-tightening, as this can cause the shaft to seize. Additional tightening is recommended after a few days, even if no leakage is observed.

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