Piston seals GT3

DESCRIPTION

Fabric-Reinforced Rubber W-Pack Seals for Heavy-Duty Hydraulics

The multi-piece piston seal assemblies of the **GT3, GT5, and GT7 series**, universally known in the industry as vee-packings or Chevron Seals, are high-integrity dynamic sealing systems engineered for hydraulic cylinders operating under severe conditions. Featuring an adjustable modular configuration composed of multiple stacked V-shaped rings, they combine an elastic sealing lip with fabric-reinforced rubber (rubberized cotton). This specialized architecture distributes radial pressure uniformly and exhibits exceptional resilience against pressure shocks, heavy vibrations, and significant rod/piston misalignment, preventing leakage even on worn or imperfectly honed surfaces.

PROFILES AND PACKSET COMPOSITION

The series is classified based on the number of intermediate V-rings installed within the seal assembly, allowing precise configuration matching the housing groove height and operating pressure severity:

PROFILE / SERIES	STRUCTURAL COMPOSITION	TYPICAL APPLICATION
Type GT3	1 bottom support ring (female), 3 intermediate V-rings with at least two fabric-reinforced, and 1 top pressure ring (male).	Standard industrial cylinders, medium pressure ranges, and restricted axial envelopes.
Type GT5	1 bottom support ring (female), 5 intermediate V-rings alternating homogenous rubber and fabric-reinforced, and 1 top pressure ring.	Mobile hydraulics, earthmoving machinery, and cylinders subjected to severe pressure spikes.
Type GT7	1 bottom support ring (female), 7 intermediate V-rings with maximum cross-section and full fabric reinforcement, and 1 top pressure ring.	Ultra-heavy duty applications, large hydraulic presses, steel rolling mills, and oversized cylinders.

MATERIALS & OPERATING CONDITIONS

COMPONENT	MATERIAL / COMPOUND	VELOCITY	TEMPERATURE	MAX PRESSURE
Intermediate V-Rings	75 ShA Nitrile Rubber (NBR) alternated with Cotton Fabric-Reinforced NBR	Up to 0.5 m/s	−30 / +110 °C	GT3: 40 MPa GT5: 50 MPa GT7: 60 MPa
Premium Options	Fluoroelastomer (FKM / Viton) reinforced with Aramid Fabric (Kevlar)	Up to 0.5 m/s	−20 / +200 °C	Superior chemical resistance at elevated temperatures
Supports & Headers	POM (Polyacetal) / Glass-filled Nylon or high-density hard fabric-reinforced NBR	—	Aligned with compound	Structural anti-extrusion functionality

COMPATIBLE FLUIDS

Mineral-based hydraulic oils, high-stability synthetic lubricants, industrial greases, water-glycol emulsions, and eco-friendly fluids (subject to verification of chemical compatibility with the chosen NBR or FKM compound).

KEY FEATURES AND ADVANTAGES

- **Axial Adjustability:** the complete packset height can be adjusted or shimmed by tightening the housing gland flange. This design allows operators to mechanically compensate for physiological wear over time without immediate component replacement.
- **Excellent Mechanical Resistance:** the internal cotton or aramid woven reinforcement prevents dynamic lip extrusion even when facing large mechanical extrusion gaps or extreme system pressure spikes.

- **Adaptability to Damaged Surfaces:** the multi-lip V-ring flexibility provides reliable sealing performance in older cylinders, ensuring continuous hydrodynamic action even on micro-scratched or out-of-round cylinder barrels.
- **Counter-Pressure Performance:** exceptional geometric stability and structural resistance to rapid cycle inversions, typical of large industrial molding presses.

COMPLIANCE & STANDARDS

Manufactured and rigorously tested in compliance with dimensional tolerances dictated by standard market specifications for Chevron vee-packing grooves. Quality management systems certified under **ISO 9001**.

MARKET CROSS-REFERENCES

MANUFACTURER	GT3 SERIES	GT5 SERIES	GT7 SERIES
Net Seals	Fabric Packset Series GT3	Fabric Packset Series GT5	Fabric Packset Series GT7
Freudenberg (Simrit)	Chevron / Packset Profile	Chevron / Packset Profile	Chevron / Packset Profile
Parker Prädifa	E5 Multipiece Profile	E5 Heavy Duty Profile	E5 Custom Special Profile
Dichtomatik	DI / DLI Pack Profile	DI / DLI Heavy Profile	DI / DLI Special Profile
Kastas Sealing Tech.	K31 Profile (3 pieces)	K32 Profile (5 pieces)	K32 Special (7 pieces)
Trelleborg	V-Pack standard profile	V-Pack Heavy Duty profile	V-Pack Custom profile