

Pusher seal — Key product parameters

Parameter	Typical / published values & notes
Definition / principle	Pusher (spring-pushed) mechanical seals use a dynamic secondary seal (O-ring or gasket) that is pushed axially by springs to compensate for face wear; available as single-spring, multi-spring, balanced and unbalanced variants, and as cartridge assemblies.
Working pressure (catalog examples)	Varies by series: typical catalogue ranges from ~0 - 17 bar (≈247 psi) (general duty) up to ~51.7 bar (≈750 psi) for high-duty engineered pusher seals; API/engineered pusher seals are used where higher pressures are required.
Temperature range	Typical published ranges - 40 ° C ... +204 - 230 ° C (lower and upper limits depend on elastomer/face materials and series). Some API/heavy-duty pusher seals are specified to similar or broader ranges per face/elastomer choice.
Sliding speed / peripheral velocity	Typical catalogue guidance: up to ~23 - 25 m/s (≈75 - 82 ft/s / 4,700 - 5,000 fpm) depending on seal family and face materials; verify by exact part datasheet.
Face material options	Common combinations: Carbon (graphite) vs SiC; SiC vs SiC; Tungsten carbide vs Carbon; Ceramic vs Carbon — chosen by fluid, abrasives and temp.
Secondary seals (elastomers)	Typical options: Viton (FKM), NBR, EPDM, AFLAS, FFKM (Kalrez) — select per fluid compatibility and temperature.
Spring / drive types	Single spring, multiple springs (multi-spring pusher for better face loading distribution), wave/Belleville springs and robust drive collars/keys for torque transfer; cartridge designs include engineered drive systems.
Construction forms	Component (set) pusher seals and pre-assembled cartridge pusher seals; single, dual (tandem/dual) and API 682 Type A arrangements where required.
Typical benefits / limits	Benefits: cost-effective, adaptable to many shaft sizes, suitable for solids-tolerant flows if designed accordingly, easy replacement. Limits: dynamic O-ring can be damaged by abrasive particles; less inherently leak-free than some bellows designs at extreme conditions — select face/elastomer carefully.