

Balanced mechanical seal — Key product parameters

Parameter	Typical / published range (notes)
Seal principle	Hydraulically balanced face geometry (balanced pusher / balanced non-pusher; single-end balanced and balanced cartridge variants).
Typical pressure capability (catalogue examples)	Typical published working pressure ranges seen across balanced product lines: vacuum ... 16 - 35 bar ($\approx 0 \dots 16 - 35$ barg / 0 ... 230 - 508 psi) depending on series.
Typical temperature range	Catalogue examples: $-75 \text{ }^\circ\text{C} \dots +300 \text{ }^\circ\text{C}$ for specialized balanced seals; many common balanced elastomer/pusher seals list $-20 \text{ }^\circ\text{C} \dots +120 - 200 \text{ }^\circ\text{C}$ depending on face / elastomer selection (e.g., carbon/SiC faces with metal parts extend upper limits).
Typical allowable sliding speed / rpm guidance	Example published service values: up to ~ 23 m/s ($\approx 3,600$ rpm for medium diameters) in Flowserve standard cartridges; specialized engineered balanced seals list higher allowable vg in their TDS. Always verify with the chosen face material and diameter.
Face material pairings (common)	Carbon (graphite) vs SiC, Carbon vs Ceramic, Tungsten carbide vs Carbon, SiC vs SiC — material choice driven by fluid, abrasives and temperature.
Common construction variants	O-ring pusher balanced seals (short / DIN balanced), cartridge balanced seals (pre-assembled), balanced bellows versions (in some designs), mechanical face-balanced mixer/agitator cartridge.
Typical benefits cited by manufacturers	Lower face load \rightarrow reduced wear and higher pressure capability; improved stability at varying pressure; cartridge options speed installation & reduce alignment risk.