

53K Mill Rotary Seal

CHESTERTON 53K Mill Rotary Seals are designed to provide long lasting sealing & protective solutions withstanding to high speed and large misalignment of rolls in heavy industry.

The advanced technology of combined finger and garter springs with high performance materials outlast the conventional radial oil seals in the most difficult applications.

No Leakage







- Unique lip preload system with highly elastic garter-finger spring combination
- Large shaft run-out compensation capability
- Special design for ultra high surface speed
- High performance elastomer materials
- High resistance to compression setting
- High resistance to wear

Longer Service Life

- Maintained luboil film underneath the lip for long seal life
- Specially designed seal lips combined with autolubricated compound to reduce friction
- Specially designed seal lips carries integrated PTFE-lip tip.
- Excellent chemical resistance
- Outstanding resistance to high and low temperature conditions
- Long elastic memory & resistance to aging

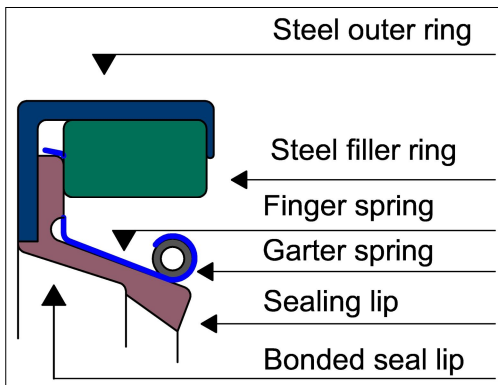


Available Designs

Series		Usage
53K		standard style with garter-finger spring system
53KW		with additional dust lip
53KHP		with special, robust lip profile to withstand high pressures up to 0,1 MPa (1 bar)
53KL		with special, optimized lip interference for high speed applications
53KLHS		with special, low lip interference for ultra high speed applications
53KLPT		with integrated (vulcanized) PTFE-lip tip

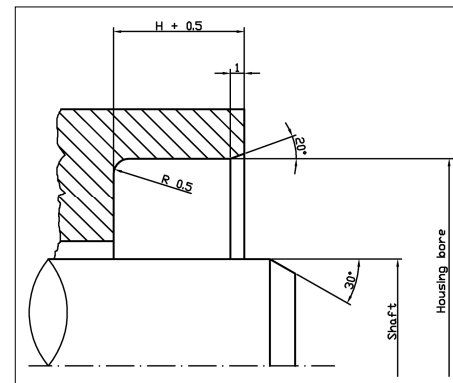
Typical Applications

- ✓ High speed gear drives
- ✓ High speed back-up rolls in cold mills
- ✓ High speed back-up rolls in cold mills
- ✓ Work rolls in hot and cold mills
- ✓ Aluminum foil mills
- ✓ Paper machines
- ✓ Cement plants
- ✓ Power plants



- The service life and performance of the are largely dependent upon the preload of the seal lip on the shaft. In this respect the 53K design offers a significant advantage over conventional garter spring seal types as a result of its highly elastic garter-finger spring combination.
- Shaft misalignment (shaft deflection, bearing clearance, out of round and run-out) creates changes to the lip preload that can in conventional seals compromise either or both lip tip sealing integrity and seal life.
- The finger-garter spring combination in 53K largely eliminates the effect of external forces causing changes in lip tip preload and therefore is more likely to maintain the fluid film underneath the lip the condition of which has the greatest effect on seal service life and performance.

Shaft and housing tolerances	
Shaft Ø (mm)	Housing bore Ø (mm)
<= 100 +/- 0,08	<= 76 +/- 0,025
101 to 150 +/- 0,1	77 to 150 +/- 0,04
151 to 250 +/- 0,13	151 to 255 +/- 0,05
>= 250 +/- 0,25	256 to 510 + 0,05/-0,10
	511 to 1.015 + 0,05/-0,15
	> 1.015 +0,05/-0,25



Shaft Hardness and Surface Finish			
Speed (m/sec)	Max roughness		Hardness (HRC)
	R _a (µm)	R _{max} (µm)	
<= 10	0,5 - 0,6	2 - 3	30
11 to 16	0,3 - 0,5	1 - 2	40
> 16	0,2 - 0,3	0,8 - 1	50

Operational conditions		
Elastomers	NBR80+PTFE	FKM70+PTFE
Material of metal case	Fe-PO3	Fe-PO3
Material of steel filler ring	Fe37	Fe37
Material of spring carrier	AISI 301	AISI 301
Materials of garter spring	AISI 316	AISI 316
Lubricating greases	- 20 °C / +100 °C	- 20 °C / + 200 °C
Mineral oils	- 20 °C / +100 °C	- 20 °C / +200 °C
Surface speed (m/sec)	25	25 - 35
Technical pressure (Mpa) 53K, 53KW, 53KL, 53KHS 53KLPT	0,05	0,05
Technical pressure (Mpa) 53KHP	0,1	0,1