DUO-CONE SEAL GROUPS

OE QUALITY SEALS

Goetze®'s 76.90 Duronit long-life Duo-Cone face seals and **IB-Seal Duo-Cone seals** are engineered to maximize the lifespan of industrial machinery in the mining, construction, and agriculture sectors. These seals, crafted with advanced materials, offer exceptional wear resistance and resilience under extreme conditions. Their **extended service life** and **reduced maintenance requirements** make them the ideal choice for heavy-duty industries where downtime is costly.

Key Benefits:

- **Extended Service Life:** Designed to last longer, minimizing frequent replacements.
- **Reduced Maintenance Costs:** Lower costs over time due to enhanced durability.
- **Reliability in Harsh Environments:** Withstand abrasive and corrosive environments, ensuring long-term operational efficiency.
- **Consistent Performance:** Maintain a steady seal, preventing leaks and protecting machinery components.

Both **Goetze®** and **IB-Seal** Duo-Cone seals are stocked by **IBFS** to provide customers with long-term savings, enhanced equipment uptime, and reliability in harsh operating conditions, positioning IBFS as a key supplier in the mining and earthmoving sectors.

Below are some of the Duo Cone Seal groups by model that we supply – more are shown in the catalogue.

- **BELL ARTICULATED DUMP TRUCK:** B35, B40, B50, AH400
- **CATERPILLAR:** 777C/D/F/G, 785C/D, 789B/C, 793B/C, 793D/F
- **CLARK, DANA SPICER AXLE:** 53R
- **HITACHI:** EH4500, EH5000
- **KESSLER:** D91, D106, D111
- **KOMATSU:** 465-5,-7, 785-3,-5,-7
- **UNIT RIG:** MT4400
- **VOLVO ARTICULATED DUMP TRUCK:** A30, A35, A40C/D/E/F

DUO CONE SEAL GROUPS

At Industrial Brake we supply high quality ISO certified, quality assured Goetze and IB-Seal Duo Cone floating seals.

Key Features:

High Sealing Efficiency: Our Duo cone seals provide a tight, long-lasting seal to maintain the performance and reliability of axle components.

Resistant to Harsh Environments: Capable of withstanding extreme conditions such as high pressure, temperature and contamination.

GOETZE

IB-SEAL

Test Data: Review of Longevity, Cost Efficiency and Reliable Operation.

Metallic Components Performance Comparison

IBFS studied all product lines against critical material performance indicators to ensure a fair comparison. These included: Processes, Wear Life, Resistance to Corrosion, Scoring, Chemicals and high Temperatures

	Goetze	IB-Seal	Caterpillar			
Material	**76.90 Duronit**	**15Cr3Mo Iron**	**C6**	**Stellite**	**NiHard**	**Formed**
Process	**CAST**	**CAST**	**CAST**	**CAST**	**CAST**	**STAMPED**
Cost	**MEDIUM**	**LOW**	**HIGH**	**HIGH**	**MEDIUM/HIGH**	**LOW/MEDIUM**
Wear Life, Corrosion	**MEDIUM/HIGH**	**MEDIUM/HIGH**	**MEDIUM/HIGH**	**HIGH**	**MEDIUM/HIGH**	**LOW**
Corrosion resistance	**HIGH**	**HIGH**	**HIGH**	**MEDIUM/HIGH**	**LOW/MEDIUM**	**MEDIUM**
Scoring resistance	**HIGH**	**HIGH**	**HIGH**	**MEDIUM**	**MEDIUM/HIGH**	**MEDIUM/HIGH**
Rotational Speeds	**HIGH**	**MEDIUM**	**HIGH**	**MEDIUM**	**MEDIUM**	**LOW/MEDIUM**

Load/Toric Ring Performance Comparison

Caterpillar, Goetze and IB-Seal employ a range of elastomeric materials to operate in diverse operating conditions. These have the following characteristics and suitable applications:

Elastomer	Temperature Range (°C)	Key Characteristics	Typical Applications
Nitrile (NBR)	-17 to +100	Good oil/fuel resistance	General-purpose: axles & final drives
Low-Temp Nitrile	-35 to +100	Maintains flexibility in cold conditions	Cold climate: idlers, rollers, final drives
Silicone	-55 to +150	Excellent UV & temperature resistance	Extreme temps, environmental exposure
Hydrogenated Nitrile (HNBR)	-23 to +135	Superior wear and heat resistance	High durability/temperature
Fluoroelastomer (FKM)	-7 to +160	Exceptional chemical & temp resistance	Harsh chemical & high-heat

Comparison Summary: Goetze / IB-Seal vs Caterpillar Duo-Cone Seals

Feature	Goetze® Duo-Cone Seals	IB-Seal	Caterpillar Duo-Cone Seals
Seal Material	76.90 Duronit (chilled cast iron)	15Cr3Mo (chilled cast iron)	C6 alloy, Stellite, NiHard, formed steel
Hardness	~60 HRC	50-60 HRC	Varies by material (generally 50–60 HRC)
Elastomer Options	Nitrile Rubber, Silicone	Nitrile Rubber, Silicone	Nitrile Rubber, Silicone
Corrosion Resistance	High (due to alloying in Duronit)	High (due to alloying in 15Cr3Mo)	High/Medium (depends on alloy used)
Wear Resistance	High	High	High/Medium (depends on alloy used)
Thermal Conductivity	High	High/Medium (depends on alloy used)	High/Medium (depends on alloy used)
Compatibility	OEM-compatible sizing and function	OEM-compatible sizing and function	OEM standard

Summary of Goetze and IB-Seal Duo-Cone Seals

Based on the test results both Goetze® and IB-Seal Duo-Cone seals **match or outperform** CAT OEM seals in many critical areas, making them a **trusted and proven alternative**, especially when balancing cost, durability, and availability.

Goetze® Duo-Cone seals can therefore be considered a **comparable and high-quality aftermarket alternative** to Caterpillar OEM Duo-Cone seals across **all brands and models.** In particular for demanding applications in mining, earthmoving, and heavy machinery.

Further, **IB-Seal Duo-Cone seals** can be considered a comparable and high-quality aftermarket alternative to Caterpillar OEM Duo-Cone seals when used on mid to light duty applications. In particular underground vehicles, graders, loaders and lightly-used haul trucks such as ADTs.

Disclaimer: This case study is intended for informational purposes only. All product comparisons, performance evaluations, and claims are based on research conducted by IBFS and may vary under real-world conditions. Goetze® and Caterpillar® are registered trademarks of their respective owners. Any reference to OEM brands s is for compatibility and comparison purposes only.