

SKF

ADVANCED SEALING SOLUTIONS FOR METALS INDUSTRY

Engineered for higher performance and reliability



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 **APPLIED**
Industrial Technologies*



60%

of production costs in a steelmaking operation are influenced by the efficiency and effectiveness of the operation and maintenance activities



Seals forged to endure

Achieving a high Overall Equipment Effectiveness (OEE) is significantly challenging, specially under very harsh conditions , due to:

- Very high temperatures
- High speeds and torque
- Heavily contaminated environment

Unplanned maintenance stops could reach 3 to 5 times the cost of planned maintenance.

A non-functioning seal is, in many cases, the root cause of frequent unplanned stops

According to our bearing investigation data, circa 20% of bearing failures can be attributed to sealing issues, allowing loss of lubrication or contamination ingress.

Our seals make the difference for steel industry since decades, and now, thanks to Tenute know-how, we are heading to innovate the metal industry, here's how:

- Partners rather than customers
- Outstanding seal quality
- Our knowledge is knowing-why
- The right design for every application
- Proprietary skills
- Life span aligned with maintenance cycle



Trust your machines, they got our seals

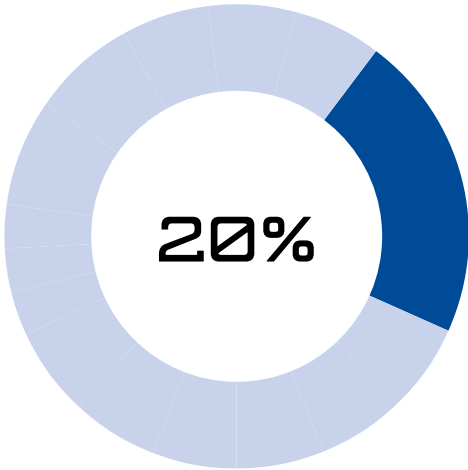
What if you could make better seal choices
to increase reliability of your operation?

What are the main problems that can lead
to unexpected downtime?

- Ingress of water, scale and dirt
- Lubricant becomes ineffective
- Smearing on functional surfaces of the bearings
- Quick seal aging
- Seal shrinkage
- Lack of seal rigidity
- Rubber hardening

- In-service bearing failures
- Premature bearing maintenance needs
- Increased maintenance and replacement cost

We are committed to enhancing the reliability of processes and reducing maintenance costs to achieve manufacturing excellence and improved Overall Equipment Effectiveness (OEE). Customers looking for cost-effective and reliable machine operation can rely on us.



of bearing failures can be
attributed to sealing issues



Sealing a longer life for your bearings

What if you could make better seal choices
to optimize your maintenance cycles?

This is nothing new: metal industry is
known for its harsh conditions.

Extreme heat, dirt and other contaminants,
pressure, friction and more. Not only external
agents, but also lubricants to keep
firmly inside the bearings.

All of these elements cause bearing life to
be put to the test and often lead to shorter
life cycle and even more maintenance and
higher Total cost of ownership (TCO).

Our sealing solutions excel in demanding
environments, offering outstanding wear
and temperature resistance, reduced lubri-
cant consumption and simplified mount-
ing and dismantling procedures.

Our seals are made with durable materials
and innovative design and processes, al-
lowing our customer to better align their
lifespan with maintenance cycles, even in-
creasing time between maintenance.



Let’s seal a better tomorrow

What if you could make better seal choices to reduce environmental impact?

If we look deeper into the concept of sustainability, the meaning is more complex than just reducing CO₂ emissions and it is based on three pillars: Environment, Business, and Society or, in other words, The Planet, The Profit, and The People. Only the integration of actions in each of these dimensions would lead us to a holistic approach to globally develop a more sustainable society.

By keeping contaminants out, our seals can extend the lifespan of bearings, reduce waste and make environments safer for the people within them.

Every small action can have significant effects, particularly when it comes to the environment and sustainability. The use of proper seals not only improves efficiency and productivity, lowering TCO, but also reduces the loss of environmentally harmful lubricants.



Hydraulic seals for HD cylinders

Standard shaft seals



Heavy industrial shaft seals



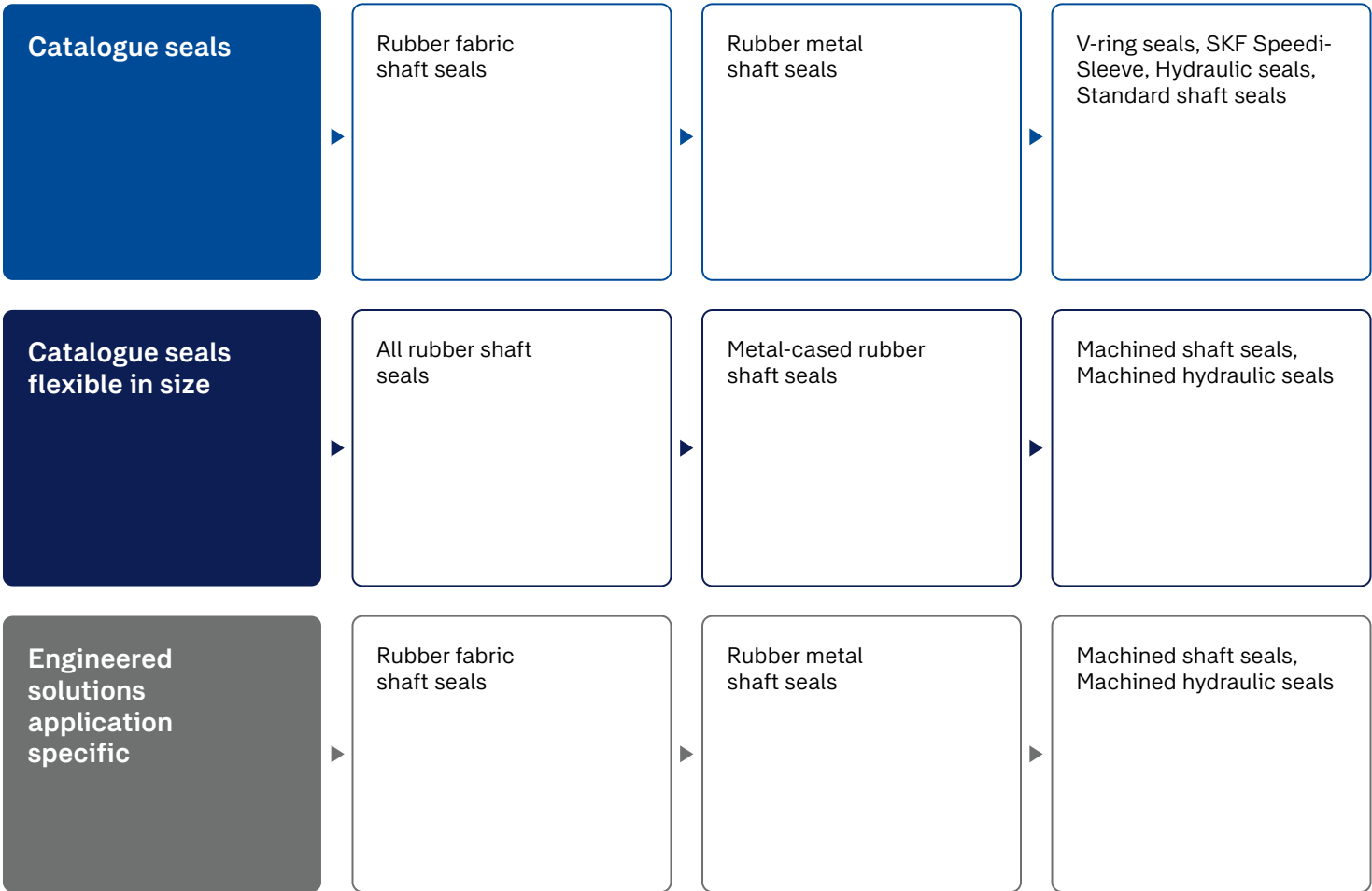
SKF's ultimate metalworking solution

Temperature and speed extremes; high and constant shock loads; abra-
sive dust, aggressive chemicals and high humidity – it's safe to say that
few industries can match the extreme operating conditions in steel and
other metal mills.

These conditions degrade equipment,
cause unplanned downtime and make ef-
fective maintenance difficult at best. In-
creasingly stringent environmental and
health-and-safety regulations are also
making environmental protection and em-
ployee safety top priorities in the industry
today.

Nevertheless – as risky, capital-intensive
and volatile the industry is – there is still a
need to increase productivity and profita-
bility. Being able to stand up against in-
tense global competition calls for flexibility
and specialized solutions.

Discover how SKF can help you stay ahead
and discover the full range of seals that
will change the way you think about rota-
tion.



Profiles overview

Catalogue seals



TR/3 (HFS)



TR/3/P (HFSA)



TR/3/CS (HFSG)



T11 (HFF)



T11/P (HFFA)



T11/CS (HFFG)



TR/3/M (HBS)



TR/3/M/P (HBSA)



TR/3/M/CS (HBSG)



T11/M (HBF)



T11/M/P (HBFA)



T11/M/CS (HBFG)



TR/3/ML (HLS)



TR/3/ML/P (HLSA)



TR/3/ML/CS (HLSG)



VA



VL



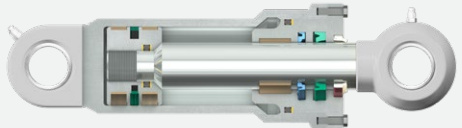
VE



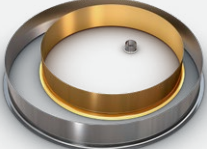
VRME



IN design - standard chevron - NEW



Hydraulic seals



SKF Speedi-Sleeve



Standard shaft seals

Catalogue seals



HSS



HSSG



R01



GK08



GS09



GR06



GR08



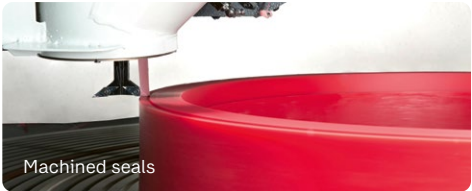
HDS



HDSL

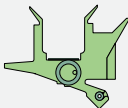


HDS7



Machined seals

Engineered solutions application specific



TDE - Oil film bearing



TR/4- High speed rolling



TR/7/M - High pressure application



TR/5/ML/PTV - High pressure and high speed



TR/VMP - Wire rolling cantilever stand



TR/8/S3 - Wire rolling finishing block



TR/8/M - Wire rolling finishing block



TFW - Back up rolls of rolling mills



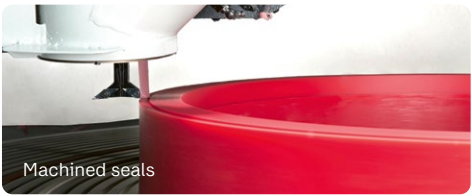
TPC - Bearing seal



TR/VO - Back up and work rolls



TR/VA/ML/PTV - Back up and work rolls



Machined seals





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