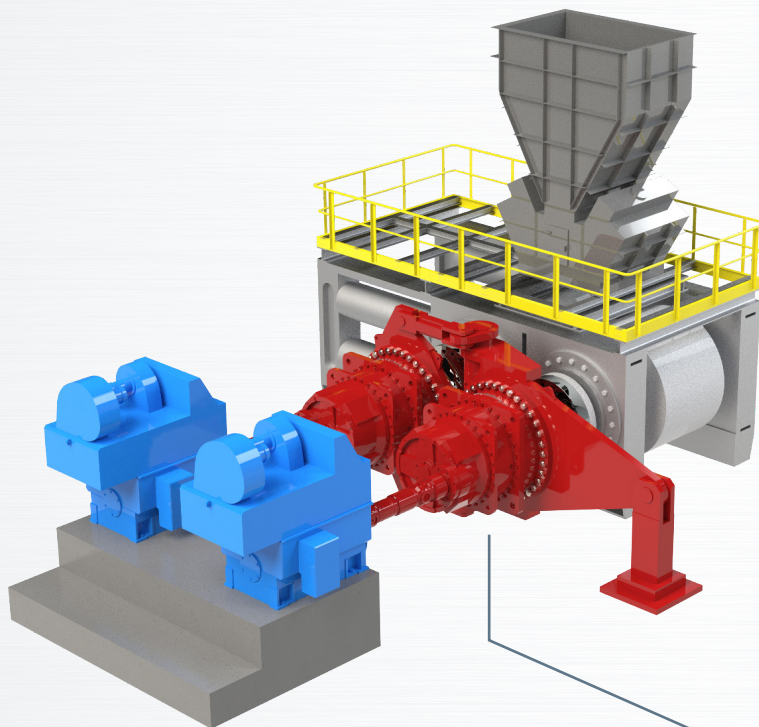


Technical Paper

June 2020



MGS Gears Drop-in Planetary Gearbox for HPGR Twin drive with upgraded gears service factors and bearings life.



High Pressure Grinding Roll (HPGR) Technology has proven to be exceptionally effective for the crushing of iron ore, coal, cement clinker, copper ore, gold ore, iron ore, diamond ore, platinum ore, and other mineral raw materials.

HPGR are machines of a very high level of productivity. It is common to find a big processing plant depending on a unique HPGR working around the clock. The failure of one of the gear units of an HPGR drive may stop the whole complex or drastically reduce its output. Maximum reliability is a must in these planetary reducers, whose mechanisms contain many gears and rolling bearings. Only the best gears, mounted on the finest bearings can cope with the challenge of non-stop work in a variable-load almost synchronous roller rotation. Latest technologies coupled with many years of experience make MGS Gears a reliable partner for your HPGR drives.

MGS Gears Planetary Gearbox for HPGR

100% externally interchangeable with the original

Higher service factor

Longer bearing lifespan

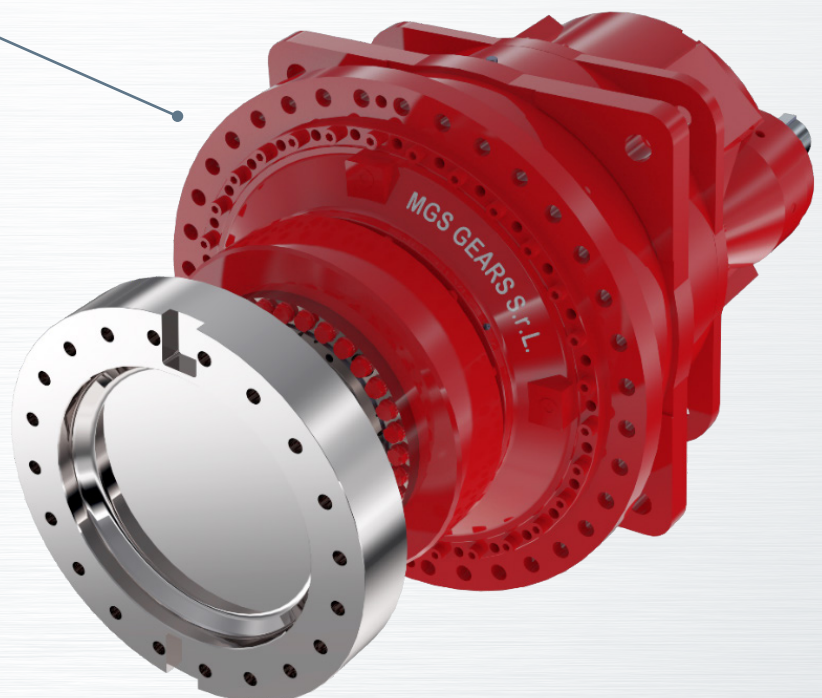
All carriers mounted on cylindrical roller bearings

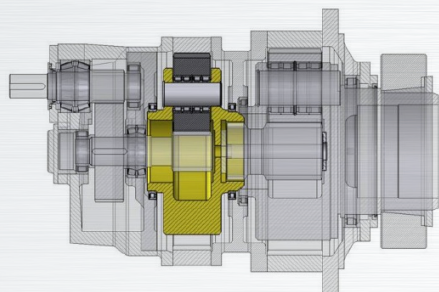
Forged & casehardened alloy steel ring gears for increased hardness and fatigue resistance.

All planets mounted on two-row cylindrical roller bearings, matched to obtain optimum load share, greater load capacity and longer lifetime

All cylindrical roller bearings with "black oxide" surface treatment to reduce slippage between the rollers and raceways, as well as improving lubricant film formation.

Gears developed by simulation-driven design using most advanced techniques available in the industry.

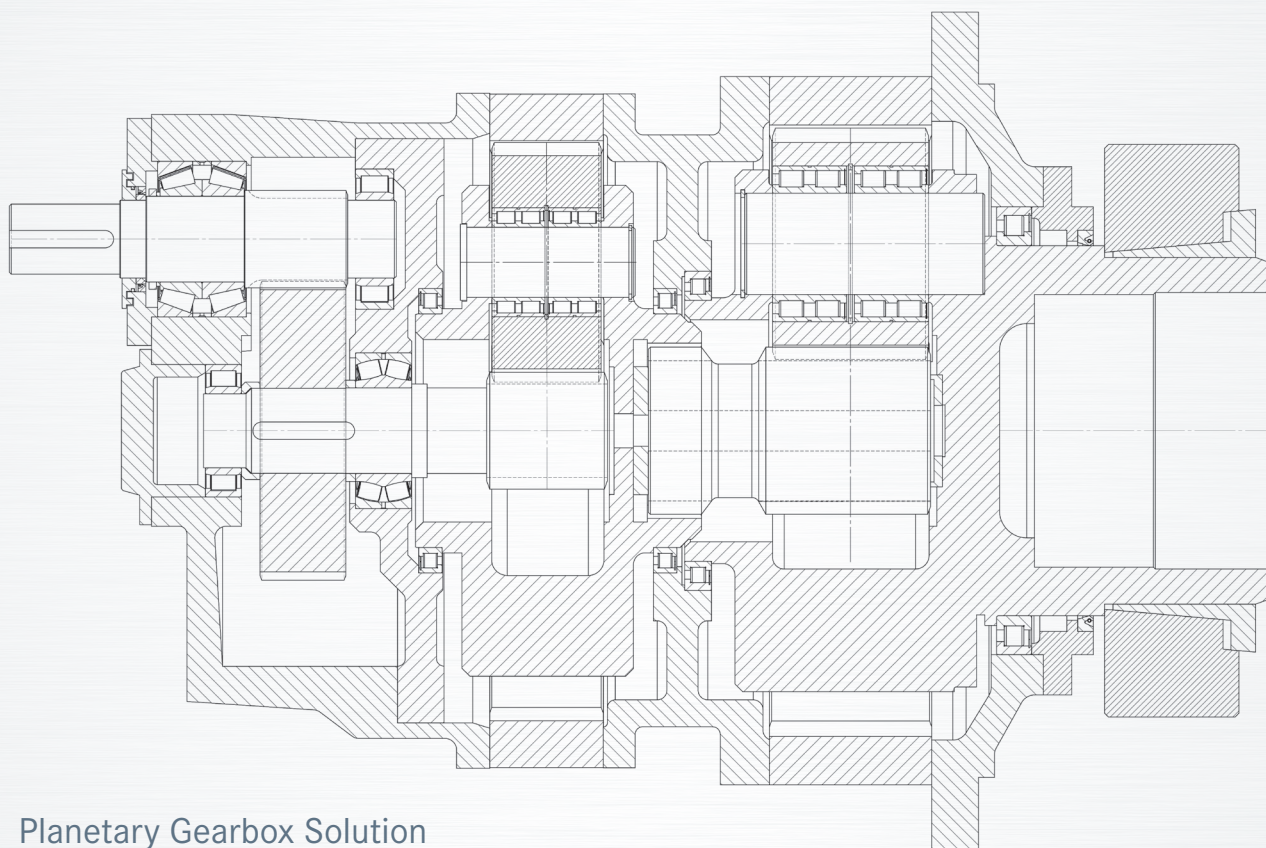




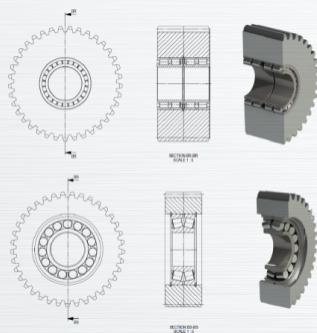
First planetary stage planet carrier supported by cylindrical roller bearings



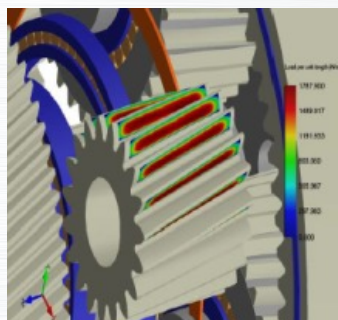
All cylindrical roller bearings with "black oxide" surface treatment to reduce slippage between the rollers and raceways, as well as improving lubricant film formation.



Planetary Gearbox Solution



Planetary first stage planets mounted on a pair of two-row full complement cylindrical roller bearings, matched to obtain optimum load distribution, greater load capacity and longer lifetime.



Optimized geometry gears to achieve optimum operational load share & distribution, a key contribution to obtain a higher service factor without larger gearbox external dimensions.