



NEWS » TENSION-LEVELLER DRIVE SYSTEMS

Full performance in a small space

Innovative compact gear system for tension-levellers

As part of a tension-leveller project, the gear system specialists EISENBEISS developed a completely new type of compact gear system for the bridle rolls drive of a tension-leveller with planetary superimposed drive.

A case for EISENBEISS: a tension-leveller gear system in the smallest possible space

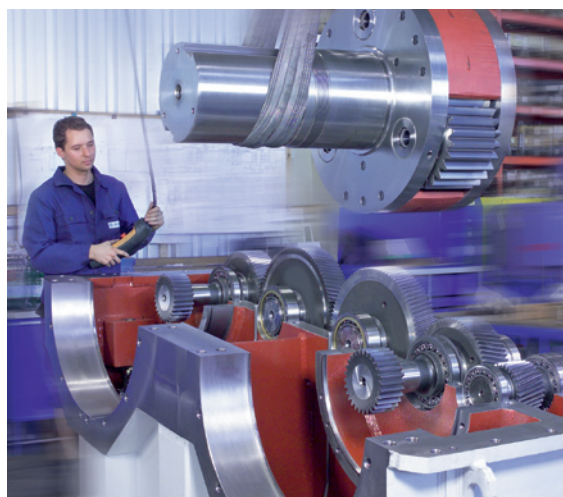
EISENBEISS, manufacturer of special gear systems, received a commission from a leading German plant manufacturer to deliver a tension-leveller gear system for a steelworks in China. The innovative compact gear system offers greater economy and higher power density while occupying less space.

Technical Data:

Drive:	E-motors
Driving power – main motor:	210 kW
Driving power – planetary motor:	54 kW
Gear ratio roller 1:	44.914
Gear ratio roller 2:	47.6361
Planetary transmission roller 2:	451.63
Output torque:	120 kNm
Lubrication/cooling:	Connection to a central pressure oil system

The problem: too little space for individual gears

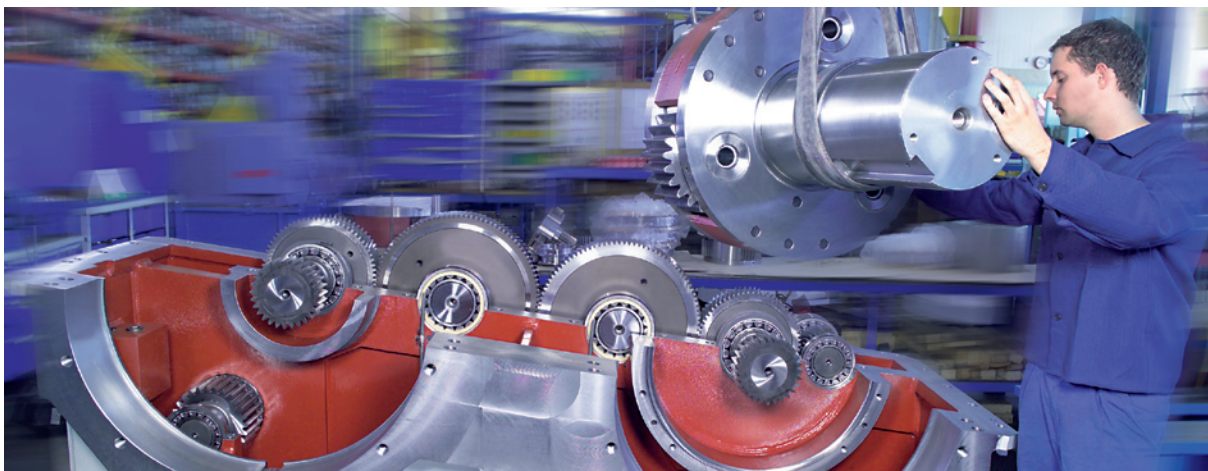
In the current tension-leveller drive system, each bridle roll is driven by its own planetary superimposed gear unit.



Performance equalisation between the brake bridle rolls and the driver rollers takes place via a shaft and separate bevel gear boxes. Because the diameter of the bridle rolls was reduced for the Chinese steelworks project, the feeder and exit bridle rolls needed to be installed in such a way that not enough room was left for individual gears. A solution was required that would offer the same performance and allow for the difference in midpoint height between the bridle rolls, whilst occupying as little space as possible.

EISENBEISS *Millmaster*[®]. Special gear system from the gear system specialists

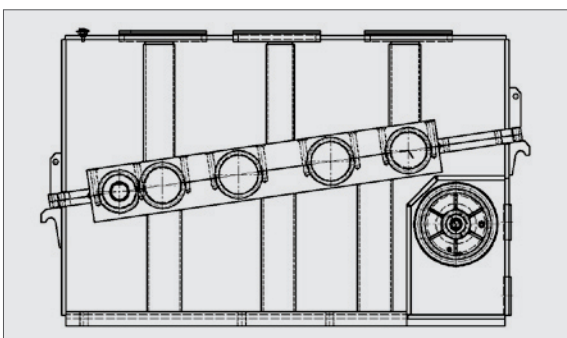




The EISENBEISS solution: compact gear system for the bridle rolls with planetary superimposed drive

Together with the client, EISENBEISS developed an innovative gearing solution using the **Millmaster®** modular gear system:

Compact: The two bevel gears and connecting shaft are replaced by a spur gear chain. Both gears are combined in a compact housing. The height difference between the two bridle rolls is equalised by the spur gear chain.



Easy to maintain: For ease of access for maintenance and inspection work, the housing's joint plane is placed along the connection line of the shaft's centres.

Economic: The bridle rolls take place over two planetary gearboxes each, in which the output planetary gearboxes, as well as the planet and sun gears of the down-line planetary gearbox, are identical, making fewer spare parts necessary.

Reliable: The torque from the drive shaft is distributed between the two transmission gear trains by the spur gear chain, as is any load compensation arising between the braking and driving bridle rolls.

Precise: The build-up of traction can be regulated over the auxiliary planetary superimposed drive gear train. Through the precision of the planetary superimposed drive gear train ratio, the planetary motor's revolutions-per-minute range is mapped onto the required revolutions-per-minute range, so that a very precise regulating action can be achieved.

Advantages for the steelworks operator:

- Economy of spare-parts management
- Rapid availability of spare parts
- Easy access for inspection and assembly
- Precise regulating action
- High quality line

Advantages for the plant constructor:

- Optimisation of plant layout thanks to compact design
- Reduced costs through use of spur gear chain
- A rapid solution with the **Millmaster®** modular gear system
- No subsequent alteration of the plant layout necessary
- Quicker plant assembly



Put us to the test!

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EISENBEISS – setting standards in gearing technology.



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