ASKO HydraLiners
Shift Your Rolling Mill into Overdrive.

Increase Rolling Speeds by Reducing Mill Vibration.

ASKO
During high-speed operation, rolling mills often experience vibration, rumbling, and chatter. Chatter causes thickness variation in the rolled strip. Usually impossible to detect by the eye, the uneven gage may not be discovered until it causes problems during later strip processing.

Until recently, the way to quickly and positively reduce chatter was to significantly slow down the rolling mill. But ASKO offers a better solution: the patented ASKO HydraLiner.

The ASKO HydraLiner is a revolutionary replacement mill housing liner that was developed to reduce the vibration that occurs in cold-reduction, skin pass and temper mills.

ASKO HydraLiners significantly reduce "rumbling" and "chatter" to allow rolling mills to shift into overdrive — HydraLiners have increased rolling mill speeds by 10% to 15%.

Rolling mills that have installed ASKO HydraLiners have realized significant improvements in productivity and product quality:

- Rolling mill vibration is reduced.
- Strip chatter is reduced.
- Gage tolerance is improved.
- Back-up roll damage is reduced.
- Work roll alignment is improved.
- Mill productivity increases through higher speeds.

The primary cause of chatter—bouncing backup roll chocks

The chatter on cold rolled strip in most rolling mills is generally caused by vibration inherent in the rolling process. This vibration causes the backup roll chocks to bounce. Due to clearances that are required in a rolling mill to build the roll stack and change rolls, vibration during rolling is going to occur. The problem is compounded due to the operating clearances that are necessary for the drive components, such as the gears, spindles and couplings — all of which cause looseness in the mill. The ASKO HydraLiner significantly reduces vibration in the rolling mill.
The HydraLiner, when it is expanded, acts like a large hydraulic cylinder and transmits a side thrust to the backup roll chocks to dampen and slightly restrict their vertical movement. The force applied is approximately 25-50 tons. In effect HydraLiners add the mass of the housing to the mass of the backup roll chocks, thus dampening vibration, limiting chatter and permitting higher rolling speeds.

HydraLiners are installed on the mill posts in pairs, one on the drive side, one on the operator side — usually on the exit side of the mill in the bottom backup roll position. However, they can be installed in both the bottom and top backup roll positions.

HydraLiners are bolted to the mill posts opposite the backup roll chocks. When expanded, the HydraLiner tightens the mill stand and dampens vibration. HydraLiners are simple to install; they go into the mill as a single unit, replacing the existing liner. HydraLiners can be installed on new mills as original equipment or on existing mill equipment as a retrofit item.

The most significant reduction in vibration in tandem, temper and skin pass mills results from HydraLiner installation in the bottom backup chock area of the mill stand. This has been determined through detailed vibration analysis as well as the monitoring of results at actual rolling mill installations. Vibration reduction is further enhanced in tandem mills by the application of HydraLiners in additional mill positions.
Through chatter reduction, rolling mills can run at greater speeds and quality and productivity increase significantly. ASKO HydraLiners provide several other benefits:

- **Rolling Mill Vibration Reduced**
  HydraLiners add the mass of the housing to the mass of the back up roll chocks, thus dampening mill stand vibration. The most significant reduction in vibration results from HydraLiner installation in the bottom backup chock area of the mill stand.

- **Strip Chatter Reduced**
  Because HydraLiners reduce vibration by tightening up the mill stand, chatter is also significantly reduced.

- **Gage Tolerances Improved**
  HydraLiners help reduce backup roll bounce, which is a significant cause of in-and-out product gage variation.

- **Backup Roll Damage Reduced**
  Because HydraLiners reduce chatter, rolls last longer in between grindings. Roll costs are significantly reduced and rolling mill downtime is also significantly reduced.

- **Work Roll Alignment Improved**
  HydraLiners keep the rolls firmly in place. Mill alignment is maintained and roll crossing is eliminated.

- **Mill Productivity Increased Through Higher Speeds**
  HydraLiners provide several benefits that increase product quality while the mill roll delivery speed is dramatically increased. Ultimately ASKO HydraLiners provide significant increase in productivity.

**Optional Hydraulic Package**

ASKO also offers an optional hydraulic system, including pump and controls, that makes it possible to operate ASKO HydraLiners from the rolling mill pulpit. The hydraulic system is in the mill pressure is transmitted by a pump that is usually installed on top of the stand on which the HydraLiners are mounted. One hydraulic unit can handle up to eight HydraLiners, expanding them.\