

# New Sendzimir Z-High Mill for Aluminium

Sendzimir mills have traditionally been associated with the superior cold rolling of hard-to-roll materials such as stainless steel. What is not so readily apparent is that this concept is being profitably applied to hard aluminium alloys, such as those containing 3 to 5 percent magnesium. Moreover, a version of the Sendzimir Z-high mill has recently been optimized for aluminium rolling by incorporating slightly larger work rolls in order to allow for greater draft reductions inherent in the breaking down of aluminium.

The Z-high mill, which was developed several years ago to preserve the advantages of both the high-performance 20-high cluster mill and the economical 4-high mill, can roll products that are superior to those rolled on a 4-high when thickness, strength, or gauge accuracy are the criteria, as is true for automobile panels and aircraft shells.

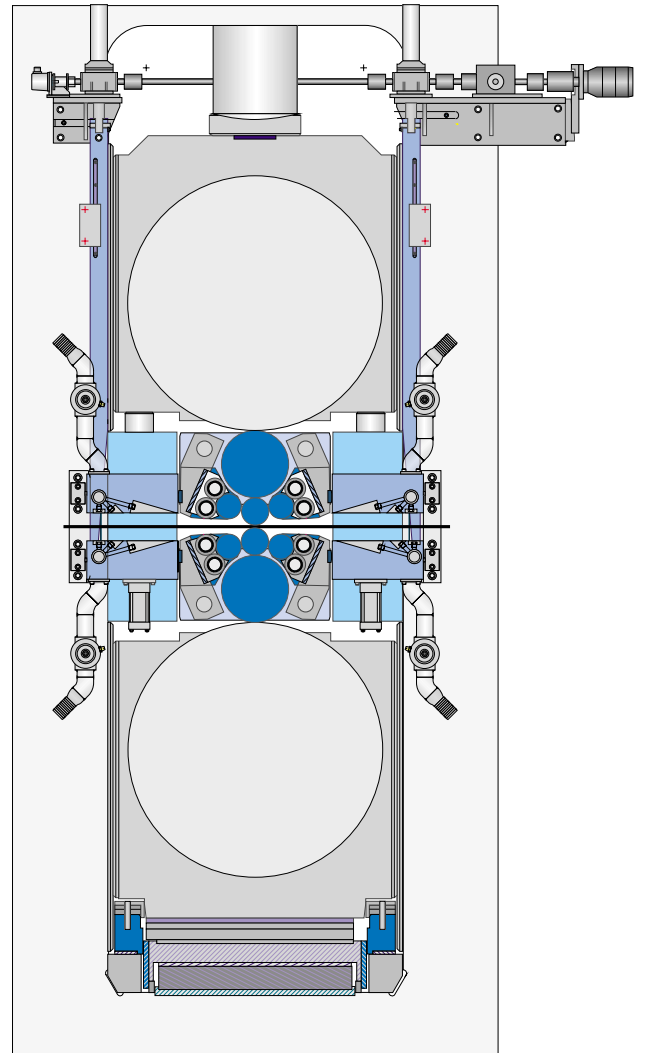
Several essential characteristics of the Z-high mill permit superior strip quality. The small work rolls are supported not by chocks but by lateral support rolls. This eliminates lateral flexure. The small work roll diameter also results in reduced roll separating forces and thus less deflection of the mill structure. Consequently, the variation in "mill spring" occurring as the incoming strip gauge varies is greatly lessened, giving inherently less variation in strip gauge and profile.

The Z-high mill is equipped with both roll bending and axial shifting controls (axial shifting was pioneered by Sendzimir 50 years ago) to provide excellent shape controllability.

The Z-high mill has operating flexibility. It can roll a very great range of materials, gauges, and widths without the need to change rolls. Even when the work rolls are changed, the time taken is usually two minutes or less. In addition, the small rolls can be cycled through the roll grinding process very quickly.

The Z-high mill can be either built as a new mill or retrofitted into an existing 4-high mill housing.

Worldwide demand for aluminium is projected to grow through the foreseeable future, as this versatile and plentiful metal continues to fill an increasing number of needs. However, aluminium processors are being pressured to cut costs and maximize production efficiencies in a market that is demanding better quality at lower cost. Consequently, the 4-high's inherent limitations — namely, gauge control and operating flexibility — are becoming increasingly troublesome. The characteristics of the Z-high mill assure more consistently high profit margins when the rolling of hard aluminium alloys or significant operating flexibility are desired.



**Essentially a 6-high mill with side-supported work rolls, the Z-high mill permits a greater variety and quality of product. Its retrofit design, allowing it to use an existing 4-high housing, minimizes the capital outlay.**