

# Sendzimir 20-High

INNOVATION BY DESIGN

Design, Fabrication, Installation, Maintenance



**S**endzimir precision cold rolling mills have name brand recognition worldwide for gauge accuracy, flatness of strip shape, and ultrathin gauge. Before 90% of the world's stainless steel strip is used, it is precision rolled to exact thickness using Sendzimir rolling technology.

## **D**esign and Application:

- Uniquely designed with small, chockless work roll, supported by Backing Assemblies in a cluster configuration.
- Cluster configuration transmits roll separating force directly from work rolls to zero crown mill housing.
- Work rolls can be manufactured of die steel, high-speed steel, or even tungsten carbide.
- Smaller work roll enables superior reductions on very hard materials
- Multiple methods of shape control using 1st intermediate lateral adjust, As-U-Roll crown control, KZR Backing Assemblies, Flexible Backing Assemblies and finally crowned rolls if necessary.

## **A**dvantages:

- The small size of the work rolls offers very important advantages:
  - Quality of surface
  - Speed of replacement
  - Thin gauge capability
- Maintains constant levels of high quality finish
- The small, chockless work rolls are very easy to remove and install
- Ideal for rolling very hard materials to very thin gauges with few intermediate anneals
- Capable of consistently holding extremely close gauge tolerances on:
  - Very wide strip
  - Metals, from soft aluminum alloys to stellite and stainless steels
- As the work rolls are supported throughout their length, mechanical deflection is minimal, and extremely close gauge tolerances can be maintained across the full roll width
- The choice of work roll material enables extremely high quality strip surface finishes, particularly important for bright stainless steels, for example. Additionally, tungsten carbide work rolls are much harder (85 Rc) and have a higher modulus of elasticity, results in fewer passes, especially on the thinnest gauges.
- The size of the work rolls also permits greater responsiveness to multiple shape control mechanisms



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## **M**aterials Rolled

Sendzimir's 20-High cluster mills can roll any metal, especially very hard metals:

- Carbon steel - autobody sheet, feed stock for the manufacture of tinplate
- Low-carbon steels - deep and extra-deep drawing
- Stainless steels - austenitic, martensitic, and ferritic
- Silicon steels - non-oriented and grain-oriented
- High-carbon steels for items such as razor blades and saws
- Nonferrous metals such as brass and special alloys of brass, copper, bronze, beryllium copper, and bimetals
- Specialty metals such as aluminum, zirconium, molybdenum, silver, gold, tantalum, titanium, cobalt, and nickel, and their alloys, such as aluchrom

## **T**echnical Data

Model	Strip Width Max Inch	Strip Width Max mm	Max Speed (mpm)	Max Power (kW/mpm)	Minimum Gauge Inch	Minimum Gauge mm	Backing Bearing Dia. (mm)	Work Roll Dia. (mm)
ZR 24	19.5	500	400	2.54	<0.001	<0.025	120	21.5
ZR 33	48	1220	500	4.55	0.001	0.025	160	28.5
ZR 23	62	1575	750	9	0.002	0.05	225	40
ZR 22	120	3050	1000	16	0.003	0.075	300	54
ZR 21	209	5300	2000	23.4	0.0035	0.09	406.4	89

Note: Minimum strip width is nominally ½ of maximum width

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