



LATROBE SPECIALTY
ROLLING
SERVICES



LATROBE SPECIALTY
STEEL COMPANY



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Inaugurated in 2005, the Latrobe Continuous Rolling Mill or CRM offers you exacting tolerances, ideal roundness and careful surface management on the most challenging materials.

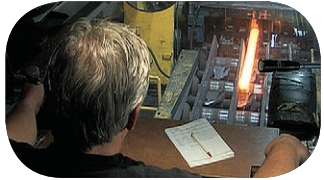
This mill rolls titanium, nickel alloys, high-speed steels, die steels, bearing steels, stainless steels and other exotic metals. Latrobe Specialty Steel designed the CRM for difficult alloys that are notoriously tough to hot work. Latrobe's CRM processes billets from 500 to 1,300 pounds.

Latrobe Specialty Rolling converts 4-inch to 5-inch billets into round or hex bars and coils in sizes ranging from 3.000 inches down to 0.222 inches in diameter.

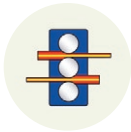
THROUGH THE MILL

▶ INDUCTION HEATING

The induction heating line and an electric resistance element equalizing furnace uniformly prepare billets for rolling. The line takes a 1300-pound billet from ambient temperature to 2300°F in only 12 minutes. In the equalizing furnace, nitrogen gas can purge the closed-chamber of oxygen. As needed, the nitrogen can shield the billet surfaces during the soak. Up to 14 billets ease through the equalizing furnace on a walking beam. Using remote sensing and camera monitoring, the operators keep a watchful eye on your billets inside the furnace operating at up to 2300°F.



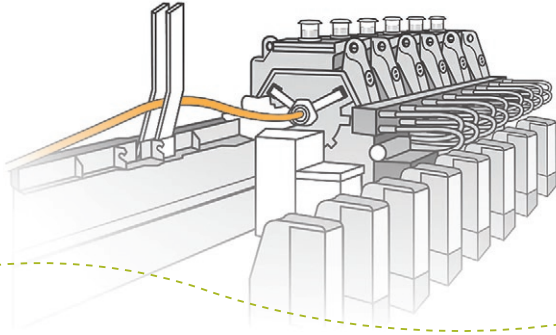
▶ 3-HIGH ROUGHING MILL



At precisely the right moment, your billet emerges from the furnace and moves to the rolling mill bed. Tilt tables in the mill floor raise the billet to enter the top two rolls of the roughing mill.

In a pulpit above the rolling mill floor, the operator positions your billet for reduction in the three-high heavy roughing mill. Through a series of cameras and mirrors, the operator closely monitors the billet until the billet reduces to a 2.250 inch diameter.

Out of the roughing mill, your bar reheats through another induction heating line to boost the temperature 100 to 500°F before entering the in-line course of the CRM.

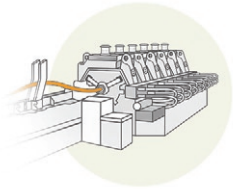


► 24-STAND IN-LINE BAR AND COIL MILL

Your elongated billet now enters the three Kocks blocks with 24 stands for bar or coil. The computerized line controls the reduction ratios and speeds as the metal courses through the Kocks stands to its final size. The constantly improved facility holds the tightest tolerances and roundness. This helps you and your customers to improve yields by reducing machining allowances.

The first Kocks block uses four individual stands with rolls of 19.7 inches in diameter. This block reduces the hot metal to cross sections from 2.250 inches down to 1.500 inches.

The second Kocks block incorporates ten individual stands and uses rolls with a diameter of 14.5 inches. It reduces the alloy with a starting size of 1.500 inches down to 0.495 inches.



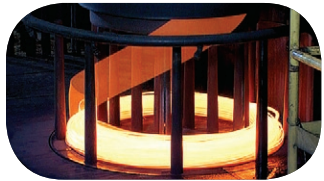
The third Kocks block can bring up to ten individual stands into play with rolls 11.4 inches across. This last block further rolls alloy with a starting size of 0.533 inches down to 0.222 inches.

► COOLING BED SHEAR

This shear precisely cuts your bar on the fly to your specifications as the rolled material moves down the conveyor. The shear wields up to 150 tons of cutting force on bar sizes from 0.500 inches to 3.000 inches diameter. The controls automatically measure the incoming bar speed and time the shear within milliseconds to slice the desired length. The shear produces bar lengths from ten feet to 30 feet.

► BAR COOLING BED

Pairs of walking beams work in tandem to move the sheared bars across the bed without deformation. A crane lifts cooled bars onto trucks or bolster frames for transport.



► COILERS

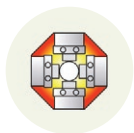
Spinning at 25 feet per second, the Garrett coilers wind the entire length of a freshly rolled billet. The Garrett coilers feed from the side for material ranging from 0.500 inches to 1.000 inch for full coils weighing up to 1300 pounds.

Edenborn laying head coilers top feed finer material at up to 90 feet per second. Wire from 0.222 inches to 0.469 inches goes through the Edenborn coilers. They too can manage up to 1300 pounds.

► CONTROLLED COOLING FURNACES

Two batch furnaces with a maximum temperature of 1400°F regulate the cooling rate of bar and coil. In a neighboring complex, Latrobe offers full atmospheric controlled continuous bar and coil heat-treating and paced cooling.

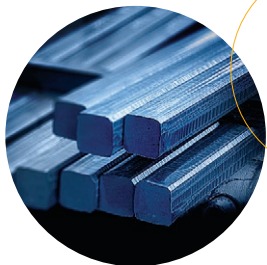
► QUALITY CONTROL



Throughout the rolling mill sequence, Latrobe Specialty Rolling Services' quality control and testing persist. In-line hot eddy current testing or electromagnetic testing checks the surface quality and dimensions with state-of-the-art equipment. It detects any surface anomalies prior to further downstream processing.

► OTHER TOLL SERVICES

Independent producers of titanium, nickel-based alloys and other metals call on Latrobe for multiple types of processing such as forging, grinding, machining or thermal treatment. Latrobe Specialty Steel takes it as a high compliment that other metal makers serving the aerospace, military and energy sectors trust Latrobe Specialty Steel for their toll services.



ASK FOR THE
VIDEO

For more information on
Latrobe Specialty Rolling
Services, call **724-537-7711**
or **724-532-6449** for the
Latrobe Specialty Rolling
Services video.

Latrobe Specialty Rolling Services

SPECIFICATIONS

Billet Data

- ▶ 4 inch (100mm) or 5 inch (120mm) square or round
- ▶ 6 ½' (2m) – 19 ½' (6m) long
- ▶ 500 lb (225 kg) – 1300 lb (600 kg) weight

Heating

- ▶ Induction Heating
- ▶ Electrical Resistance Element Soaking
- ▶ 1500F – 2300F +/-25F
- ▶ Nitrogen Shrouding Available

3-High Roughing Mill

- ▶ 2 x 1000 HP Drive Motors
- ▶ Billet Manipulation on Roughing Stands
- ▶ 2.250", 2.750" and 3.125" Round Intermediate Size

Inline Finishing Mill

- ▶ 0.222" to 0.469" Round in Coil
- ▶ 0.250" to 0.438" Hexagon in Coil
- ▶ 0.495" to 0.790" Round BIC or Bar
- ▶ 0.500" to 0.750" Hexagon BIC or Bar
- ▶ 0.858" to 3.000" in Bar
- ▶ 0.781" to 1.250" Hexagon Bar
- ▶ Inline Eddy Current Testing



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