

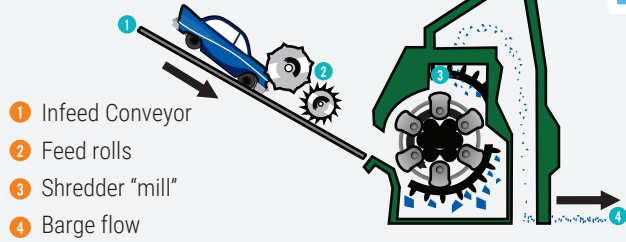
## Shredder & Yard

### SHREDDER FUNCTIONS

- > Shreds material at 160 tons per hour
- > Separates ferrous and non-ferrous (copper, brass, aluminum and fluff)
- > Produces 16,000 tons per month

### YARD OPERATIONS

- > Provides up to 2,000 tons per day
- > Handles 900,000 tons per year of incoming scrap from trucks
- > Supports baghouse operations



- 1 Infeed Conveyor
- 2 Feed rolls
- 3 Shredder "mill"
- 4 Barge flow

## Furnace (Eaf)

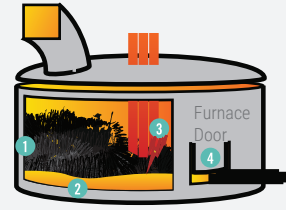
### CHARGING SEQUENCE



### MELTING PROCESS

Scrap steel is melted in 4 ways:

- 1 Gas energy
- 2 "Hot heel" practice
- 3 Electrical energy
- 4 Chemical energy



## Ladle Metallurgical Station (Lms)

### LMS FUNCTIONS

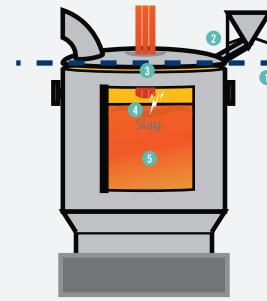
- > Adds alloys to refine heats according to chemical specifications
- > Establishes consistent temperature throughout the ladle
- > "Stages" ladles between furnace and caster to aid in continuous billet flow

- 1 Mezzanine level
- 2 Alloy additions
- 3 Alloy door
- 4 Slag
- 5 Molten steel



TAPPING SEQUENCE

After tapping, the full ladle is transferred to the LMS.



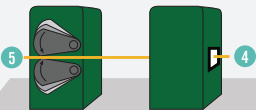
## Rolling Mill

### 4 Bar gauge

Cameras and strobe lights measure finished bars as they go through the mill, allowing operations to monitor rolled bar.

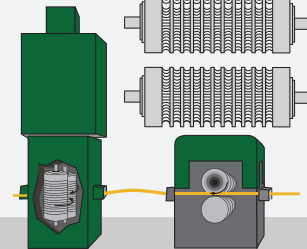
### 5 "Flying" shear

The flying shear cuts bars at speeds up to 3,000 feet per minute.



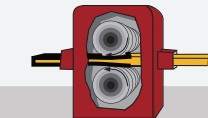
### 3 Intermediate & Finishing mill

After the roughing mill, the bars begin to get their shape in the "Intermediate" stands. The "Finishing" stands give the final shape to the product.



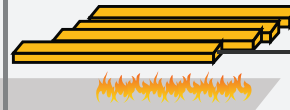
### 2 "Roughing" mill

When the hot, moldable billet exits the reheat furnace, it enters a series of stands called the "Roughing" mill. This is where the majority of the reduction work is done.



### 1 Reheat furnace

Billets from the melt shop are heated to 2,000°F in a gas-fueled furnace.



## Continuous Caster

### 1 Ladle

### 2 Tundish

### 3 Billet molds

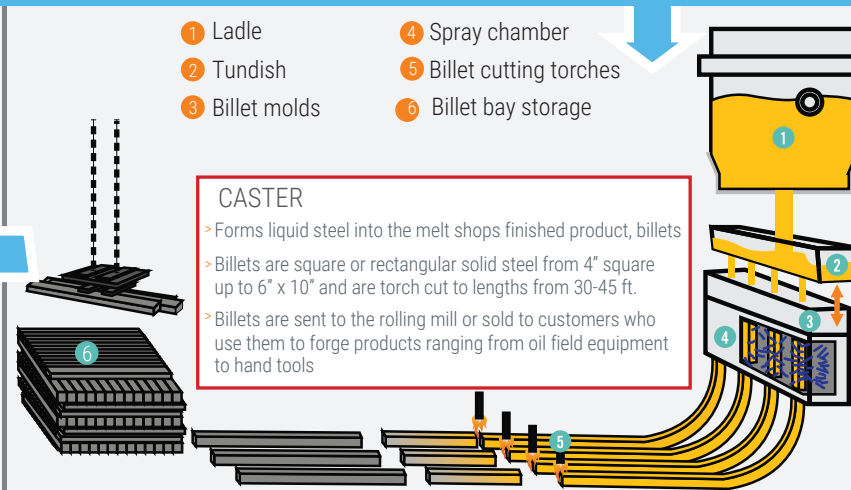
### 4 Spray chamber

### 5 Billet cutting torches

### 6 Billet bay storage

### CASTER

- > Forms liquid steel into the melt shop's finished product, billets
- > Billets are square or rectangular solid steel from 4" square up to 6" x 10" and are torch cut to lengths from 30-45 ft.
- > Billets are sent to the rolling mill or sold to customers who use them to forge products ranging from oil field equipment to hand tools



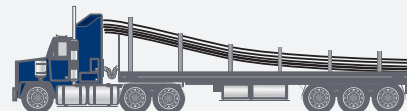
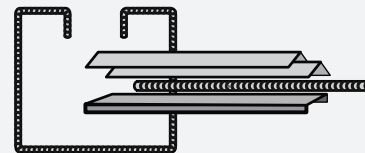
## Finishing & Transportation

### FINISHING

- > Shears and bends rebar for use in commercial and highway construction projects.
- > Straightens angles.
- > Loads CMC trucks, customer trucks, connected carriers and railcars.

### TRANSPORTATION

- > Arranges shipments of all finished products.



# Mini Mill Process



### 6 Cooling bed

- The steel exits the mill onto a football field-sized cooling bed.
- The cooling bed holds bars until they cool sufficiently for shearing.
- The cold backshear blades cut downwards.

### 7 Backshear & shipping

The backshear cuts bars to customer lengths.

