Solutions for the Steel Industry

Market Solutions

SMART SOLUTIONS FOR DEMANDING INDUSTRIES

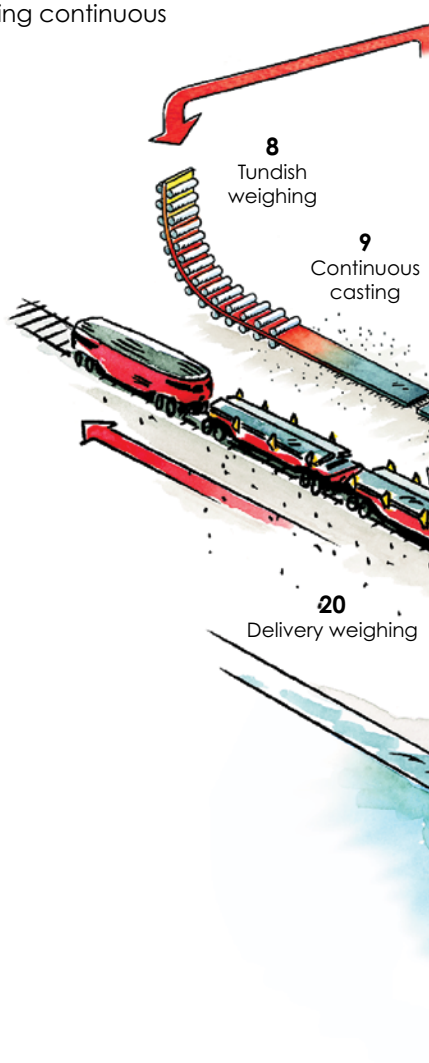
BLH NOBEL

A VPG Brand

A Complete Solution

BLH Nobel offers both standard and custom made systems and solutions for force, tension and weighing for the steel industry. Our solutions and systems are designed and built specifically to meet the challenges of measuring in rough environments. That is why our products are proven to be robust, reliable and easy to use.

Our systems are designed to meet your needs and enhance your productivity by providing continuous excellent measurement accuracy in your production process.



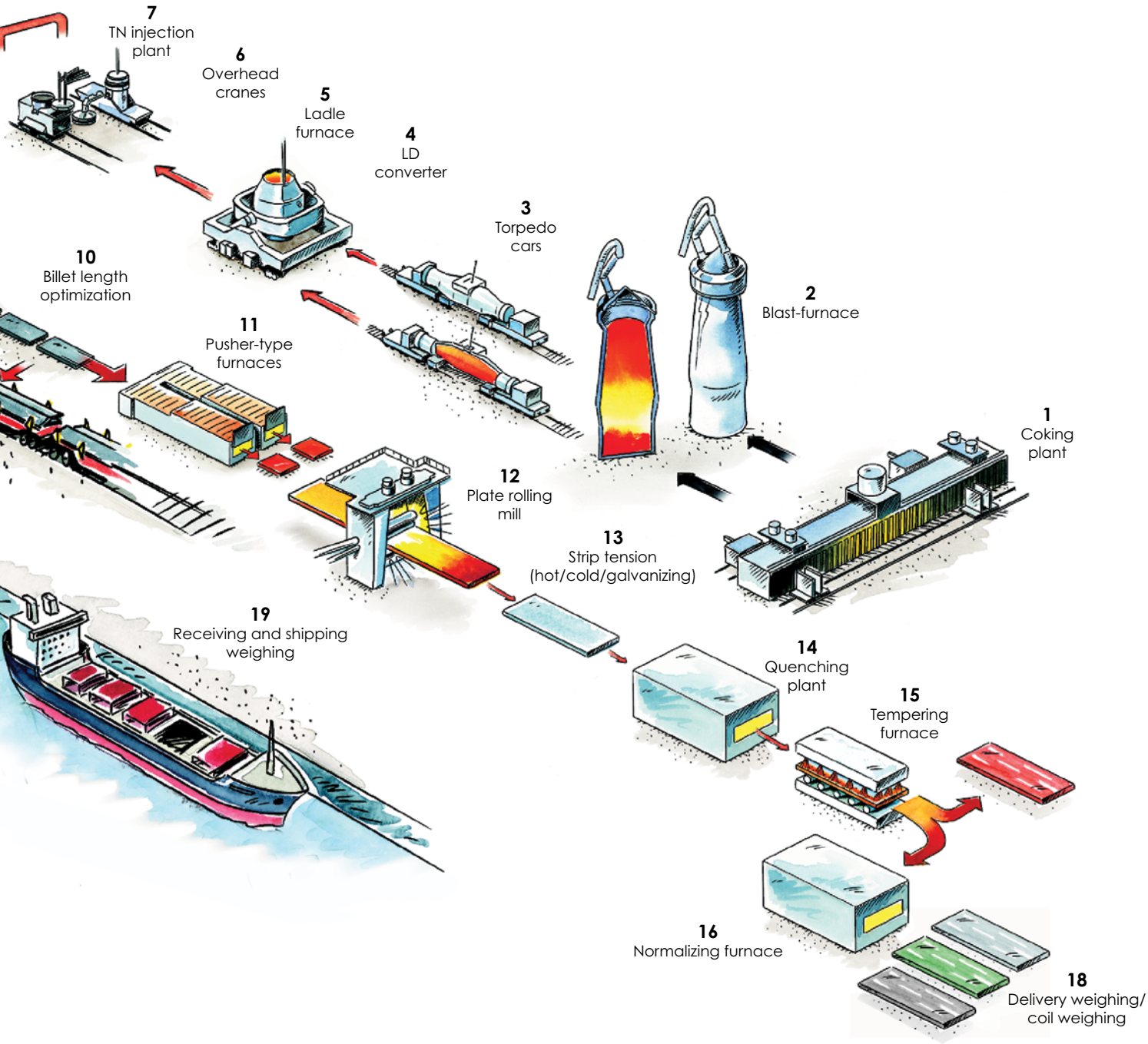
Application Key to Production Flowchart

1. Coke plant weighing systems
2. Mineral weighing—blast furnace
3. Torpedo or cigar weighing
4. BOS or LD weighing systems
5. Ladle furnace weighing
6. Crane weighing/overload systems
7. Alloy additions weighing
8. Tundish weighing
9. Billet weighing
10. Billet length optimization
11. Furnace weighing
12. Rolling mill systems
13. Strip tension (hot/cold/galvanizing)
14. Furnace weighing
15. Roller straightening force system
16. Furnace weighing
17. Scrap weighing
18. Delivery weighing/coil weighing
19. Goods terminal weighing
20. Delivery weighing

Some of these applications are shown on page 4.

Steel mill application photos courtesy of SSAB Oxelösund AB, Sweden

Production Flowchart



Examples of Solutions


1. Coke plant weighing systems


2. Mineral weighing—blast furnace

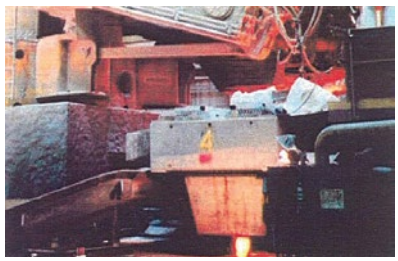

3. Torpedo or cigar weighing


4. BOS/LD weighing systems


5. Ladle furnace weighing


6. Crane weighing and overload systems weighing

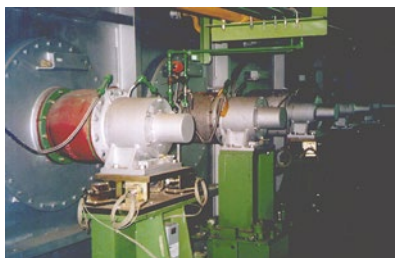

7. Weighing and control on cooling table


8. Tundish weighing


9 and 10. Billet length optimization/billet weighing

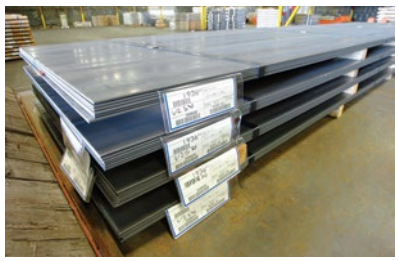

12. Roll force measurement


13. Strip tension (hot/cold)


11, 14, and 16. Furnace weighing


15. Roller straightening force system


17. Scrap weighing


18–20. Stock/delivery weighing

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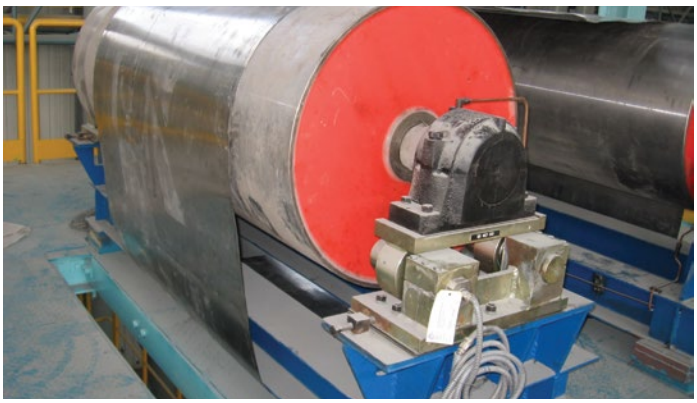
Weighing and Force Measurement Control Systems

RFS-4 Roll Force Measurement System

- Versatile roll force measurement system for mills
- Easy-to-fit extensometer sensing element
- Easy maintenance means minimum plant downtime
- Intelligent diagnostics
- Flexible software
- Custom-made load cells for all capacities

Billet Length Optimization System

- Fully integrated billet weighing and cut optimization system
- Allows cutting of billets by weight
- Saves on scrap rate in rolling mills
- Robust construction for reliable operation
- Typical accuracy of ±0.1% FSD
- Full on-site commissioning and support



Strip Tension Tensiometers

- FMU and PST families are based on standard KIS load cells and special mechanics adapted to customer requirements
- Typical accuracy of ±0.1% FS
- Standard KIS load cells are easily available, relatively low-cost, and easy to maintain
- Can also be used in hazardous areas in furnace or coating lines (ATEX)

Weighing and Batching Systems

- High reliability using proven KIS load cell design
- Very high accuracy
- Rejection of most errors due to unique design
- Special software adaptations (e.g., flow rate)
- Full installation and on-site commissioning available

Weighing and Force Measurement Control Systems

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Weighing and Force Measurement Control

We have been a turnkey supplier of weighing and batching solutions for the steel industry for more than 35 years. Whether used to weigh fractions of a gram or thousands of tons, BLH Nobel precision weighing systems address every imaginable weight-processing need—from 1600-ton LD-converter scales to ingredient storage bins to clean-in-place batching processes.

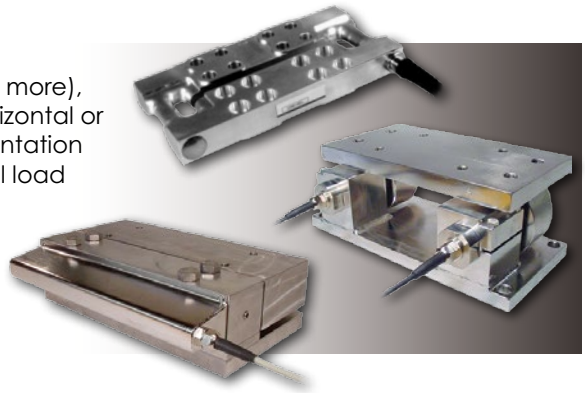
Special Load Cells

- Custom-designed and built for steel applications capacities up to 40 MN
- Replacement units for obsolete cells in machines, such as roller straighteners
- Washer-type cells for rolling mills
- Special one-off designs to solve particular applications

Strip Tension Systems

Dynamic Resultant Force Measurement

Strip tension load cells, with capacities ranging from 2 kN to 400 kN (or more), measure the resultant force in any direction and are not limited to horizontal or vertical component force. In addition, they do not require unique orientation to achieve maximum sensitivity. This permits the installation of identical load cells at multiple web tension zones regardless of the pillow block mounting or angle configuration of the roller. Our low-profile cell is sealed to meet IP67 requirements, temperature-compensated to 250°F, and dead-weight-calibrated for precision accuracy. These features add up to zero maintenance, simple retrofit, and long-term reliability for machines that continuously process material.



Instruments and Communication

G4 Multi-Channel, High-Accuracy Instrument

- Up to eight synchronous measurement channels
- Simple set-up and calibration
- 20 kHz-bandwidth provides very fast response
- Connectivity: Most fieldbus options available, plus Ethernet
- Large internal memory capacity
- Full-color touch screen provides increased functionality
- Panel- and DIN-rail-mounting versions

History and Capabilities

The Company

BLH Nobel is a supplier of advanced measurement and control systems for the steel industry. Our experience in this area is the result of more than 50 years of innovation, starting with the development of force measurement blocks and instrumentation to measure web tension. This technology led to the development of complete integrated measurement and control systems for the global metals industry, as well as systems for the measurement of weight and force.

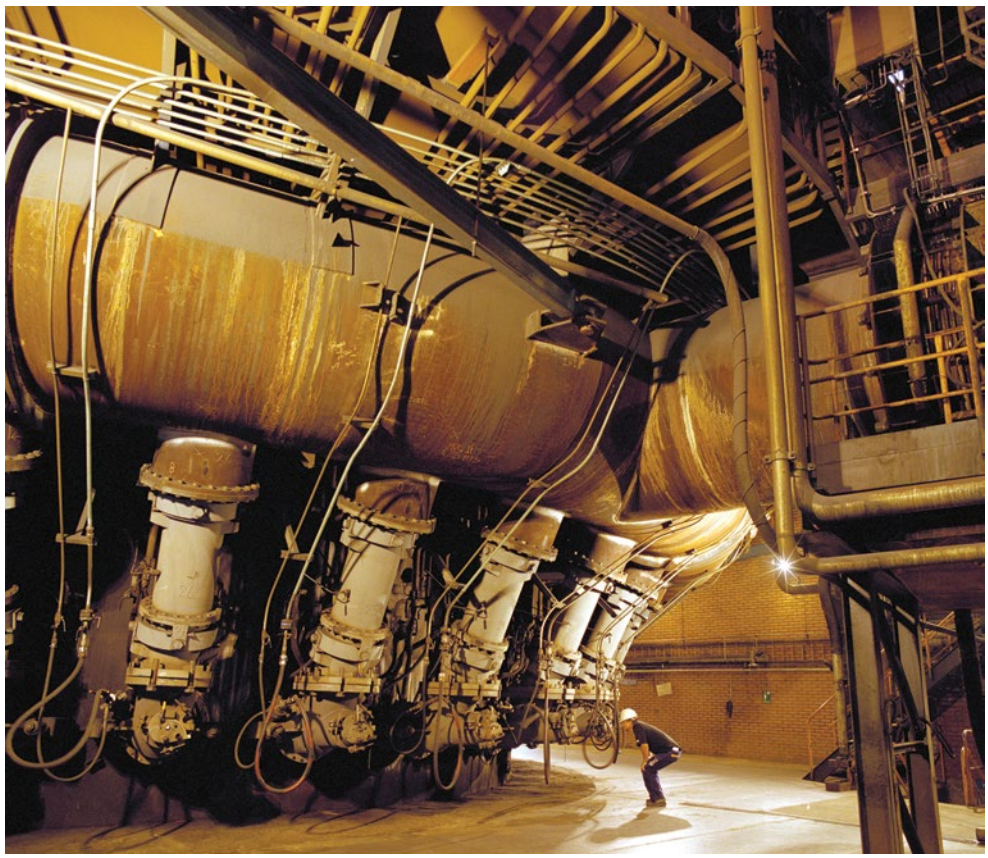
Our engineers have expertise in the steel application area. We offer both standard and custom force, tension, and weighing systems to suit a wide variety of challenging measurement applications. All of our products are specially selected by our engineers to offer the best combination of robustness, reliability, accuracy, and ease of use, and are backed by reliable customer support from our office- and field-based staff.

We were among the first to use microprocessor technology for measurement and control. In the late 1970s, we launched our uniquely designed and built digital process control systems. We continued to improve these systems over the years, and are now an industry leader. We design and build our own measurement blocks and electronic systems.

Our systems are designed and built specifically to meet the challenges of the steel industry. They are designed to meet your needs and enhance productivity.

A Strong Partner

BLH Nobel is a leading global manufacturer of equipment for force measurement and weighing applications. We are a part of the Weighing and Control Systems segment of our parent company, Vishay Precision Group, Inc. (VPG), producer of sensors based on resistive foil technology, and sensor-based systems. VPG provides vertically integrated products and solutions for multiple growing markets in the areas of stress measurement, industrial weighing, and manufacturing process control.



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