AGELLIS®

RHI MAGNESITA

STEEL / MEASUREMENT SOLUTIONS

Take Control of Your Process



© RHI Magnesita

There for you, wherever you need us

RHI MAGNESITA

The more closely we work with our customers, the greater the impact we can make for them. So a global network of offices, research centers, and production sites is important to us, and to them. We are continuously extending our global reach to be closer to even more customers.

Being closer to customers doesn't just mean we can be more responsive to their needs. It also helps us to listen better — to understand their concerns, cultures and ways of working. It makes us alert to new ways of thinking and ideas that enable us to deliver even better advice, services, and solutions.

Our exceptional resources and expertise extend far beyond making and selling products. We provide solutions to customers worldwide for cover projects, material specifications, thermal studies, numerical simulations, follow-ups and technical support in application of minerals, and maintenance and electromechanical services for refractory equipment.



35
Main production and raw material sites

70
Sales offices

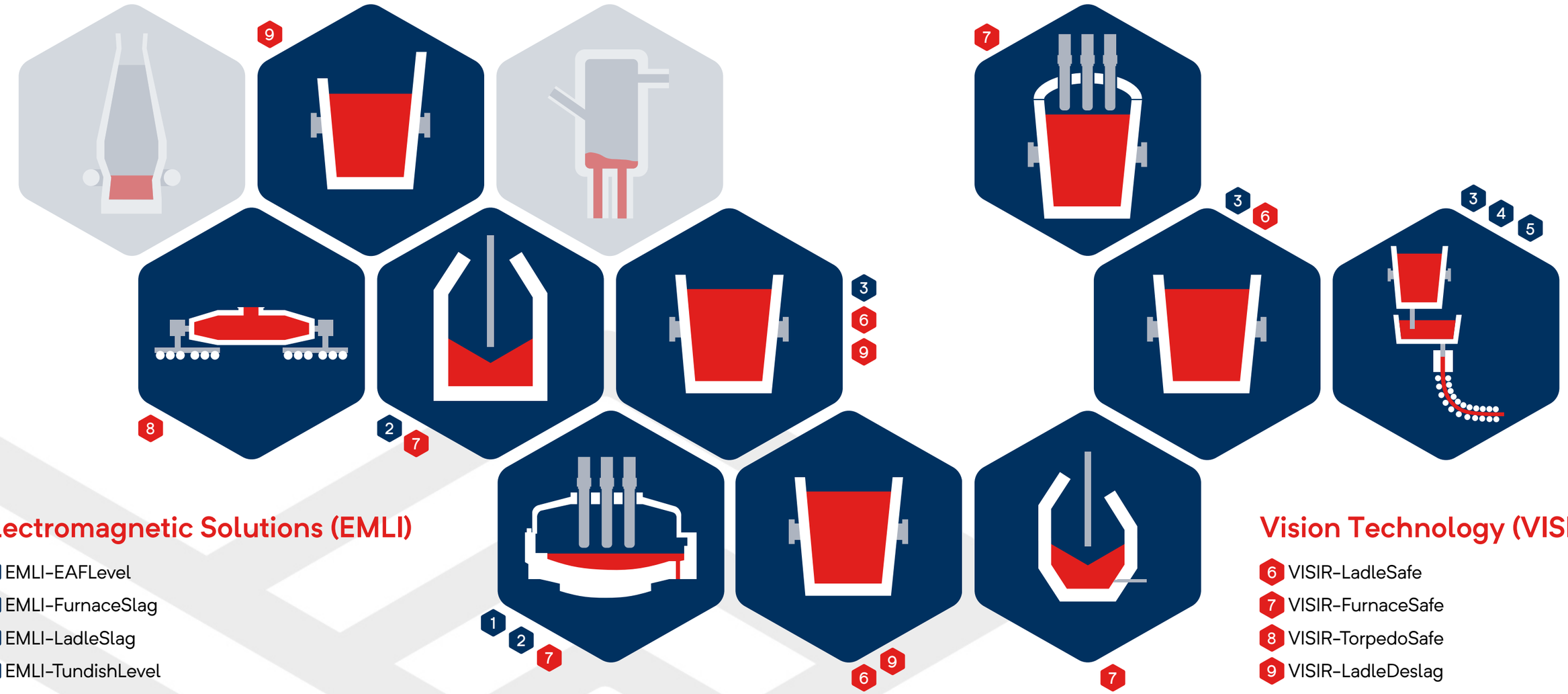
180
Countries shipped to worldwide

Optimize Your Production Process!

RHI MAGNESITA

From Furnace to Caster

Our AGELLIS® systems increase yield, improve quality, reduce maintenance and greatly enhance safety in your operation.



Electromagnetic Solutions (EMLI)

1. EMLI-EAFLevel
2. EMLI-FurnaceSlag
3. EMLI-LadleSlag
4. EMLI-TundishLevel
5. EMLI-MouldLevel

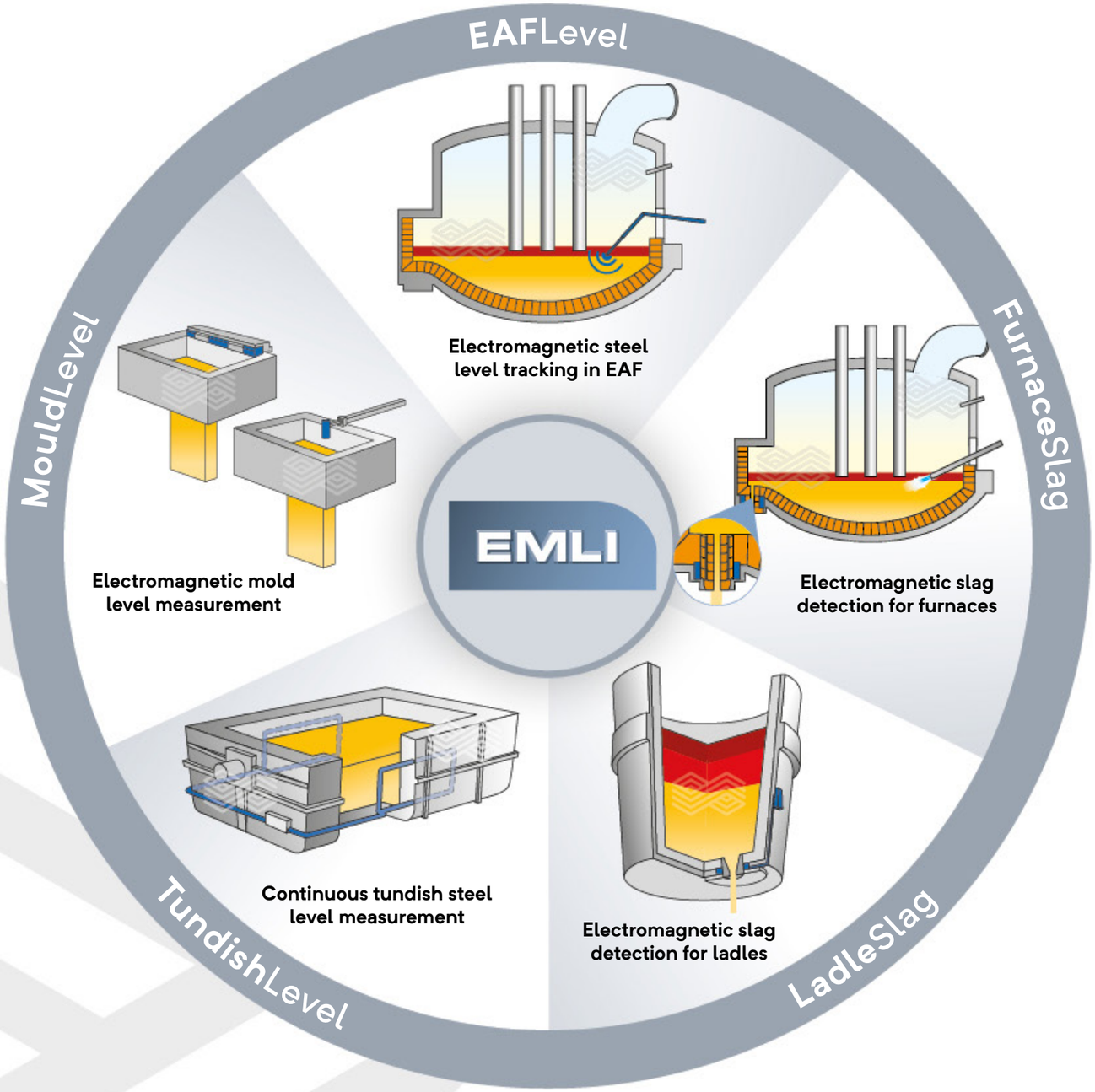
Vision Technology (VISIR)

6. VISIR-LadleSafe
7. VISIR-FurnaceSafe
8. VISIR-TorpedoSafe
9. VISIR-LadleDeslag

Content	EMLI	VISIR

EMLI — Electromagnetic Technology

- We supply innovative measurement solutions that enable increased automation and reduce bottlenecks in metal production
- Our Electromagnetic Level Indication platform (EMLI), offers solutions for level measurement, slag detection, safety and quality assessment.



Content

EMLI

VISIR

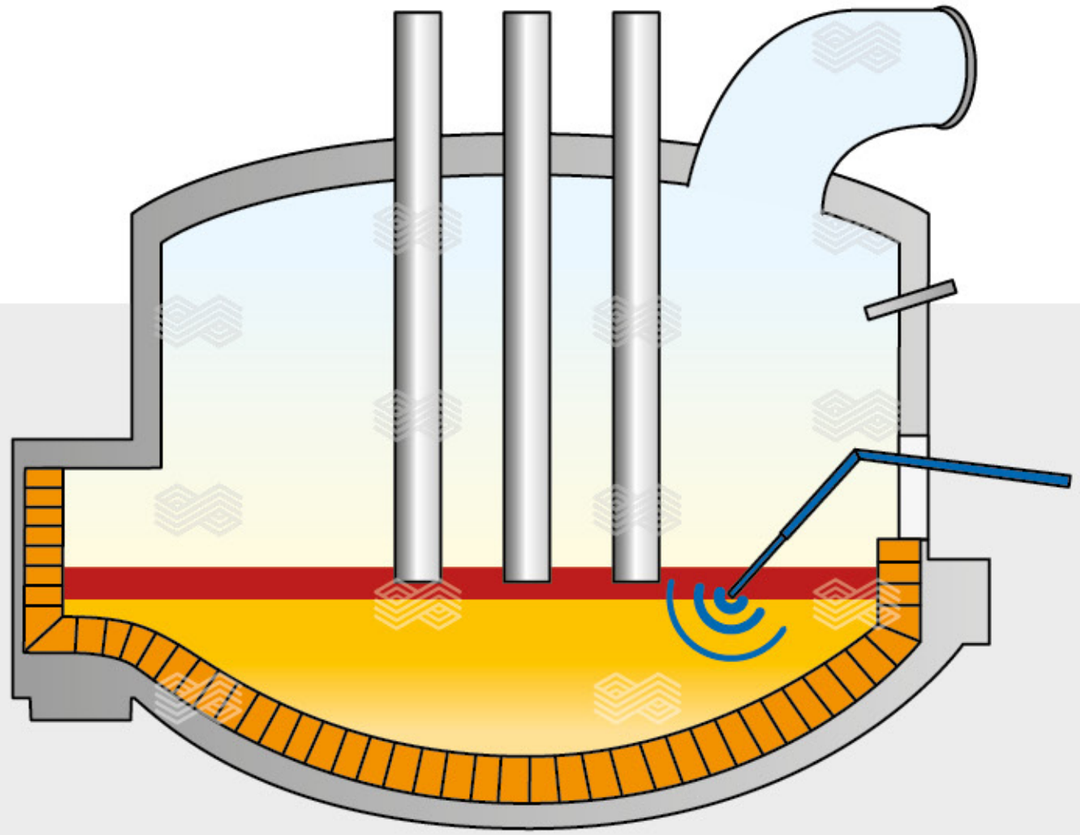
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EMLI-EAFLevel

Electromagnetic Steel Level Tracking in EAF

The EMLI-EAFLevel system permits level measurements to be performed simultaneously with temperature and material sampling, without any time loss or extra consumables. The system is easy to use with an upgrade installed in the manipulator.

The measurement system can be used in all EAF furnace types and is custom-built to fit the most common sampling manipulators.



User Benefits & Advantages

- Measure steel level accurately, when taking samples
- No time loss for an additional measurement
- No additional comsumables
- Optimize side wall injection efficiency, by knowing and managing the steel level
- Provide tracking of the steel level assisting the hot-heel management

Content
EMLI
VISIR

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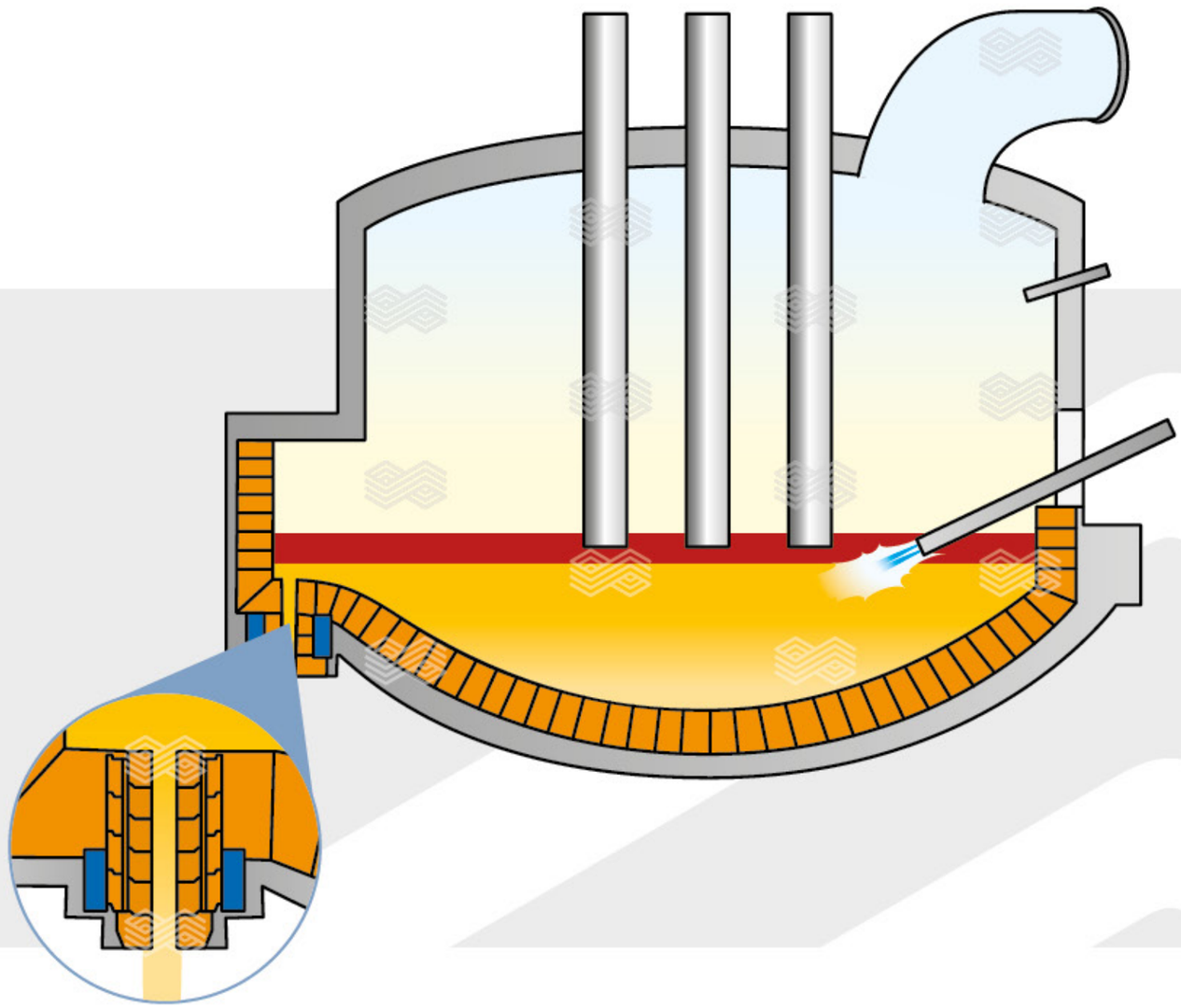
EMLI-FurnaceSlag

Electromagnetic Slag Detection for Furnaces

The EMLI-FurnaceSlag system continuously monitors the steel flow during furnace tapping and provides alarm outputs when slag is detected. The system also gives operators control over vortex formations during tapping.

The electromagnetic design ensures that the system is not affected by smoke and flames.

By controlling slag carryover a more stable secondary metallurgy process is achieved.



User Benefits & Advantages

- Control slag carryover with a fast response time
- Calculation of slag transfer amount
- Detect and avoid vortex formation during tapping
- Flames and smoke do not affect the system
- Ensure consistent secondary metallurgy process

Content
EMLI
VISIR

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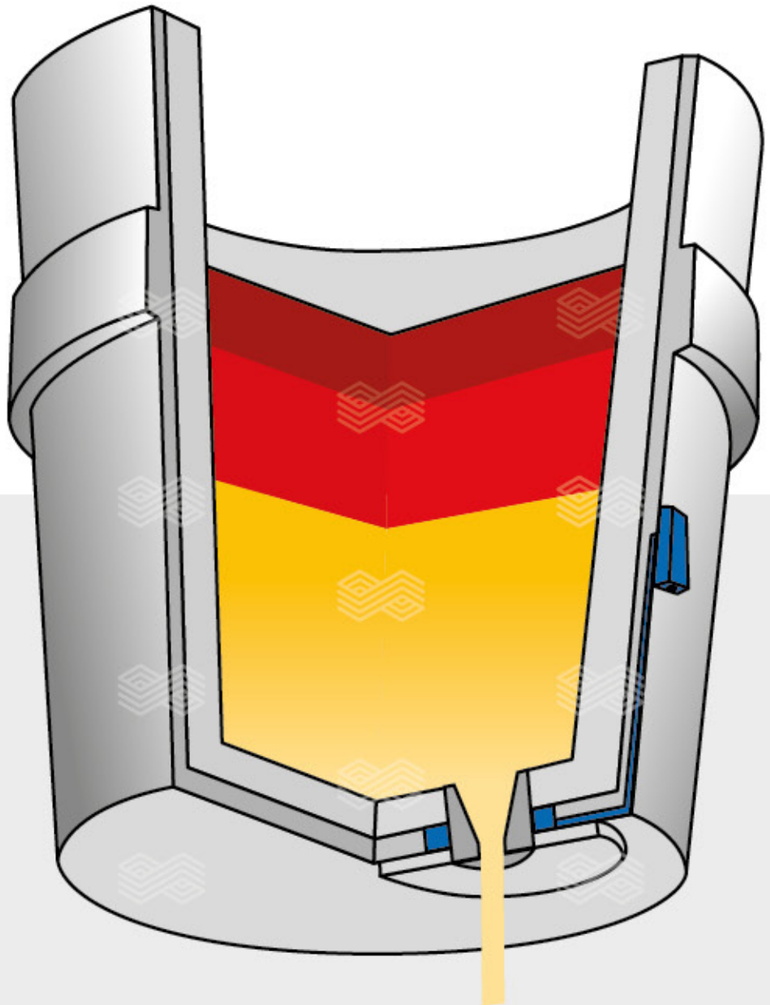
EMLI-LadleSlag

Electromagnetic Slag Detection for Ladles

The EMLI-LadleSlag system continuously monitors the steel flow during ladle teeming when casting and provides immediate and accurate alarm outputs when slag is detected.

The use of a well-functioning slag detection system increases yield significantly due to consistent and objective gate closure, every time.

Special sensors engineered to be used in a high-temperature environment and compatible with vacuum degassing process routes.



User Benefits & Advantages

- Control slag carryover precisely with a fast response time.
- Increase yield by leaving minimal amounts of steel in the ladle.
- Can handle any steel grades. No additional calibration necessary.

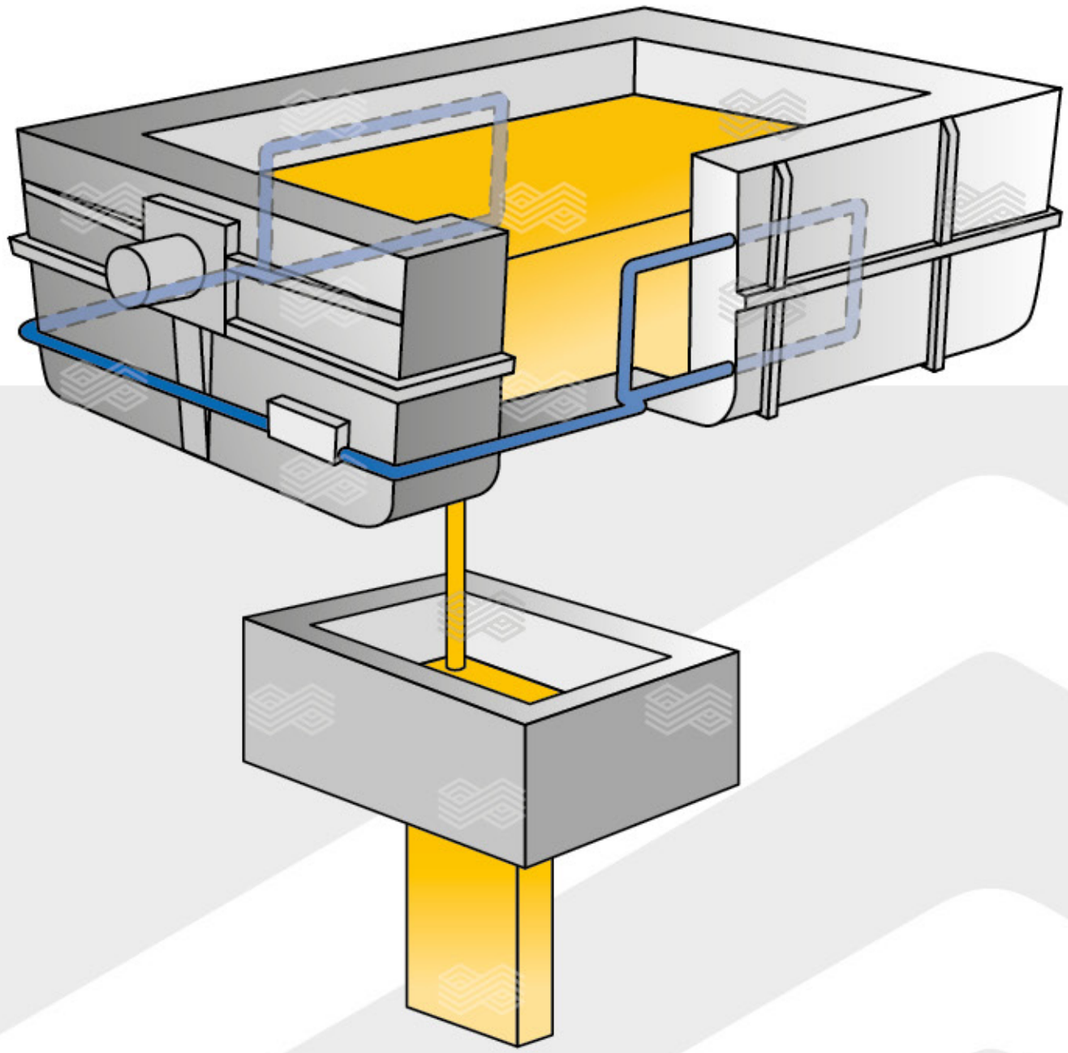
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EMLI-TundishLevel

Continuous Tundish Steel Level Measurement

The EMLI-TundishLevel system continuously monitors the true steel levels in the tundish and provides outputs to control the flow from the ladle to maintain desired operating levels without being affected by the presence of slag or protection powder.

This allows a precise steel level control ensuring a constant pressure head, minimized intermix areas and accurate draining procedures.



User Benefits & Advantages

- Continuous true steel level measurement
- Optimize yield at every drain
- Avoid slag in mold & breakouts
- Minimized intermixed area
- More constant casting speeds

EMLI-MouldLevel

Electromagnetic Mold Level Measurement

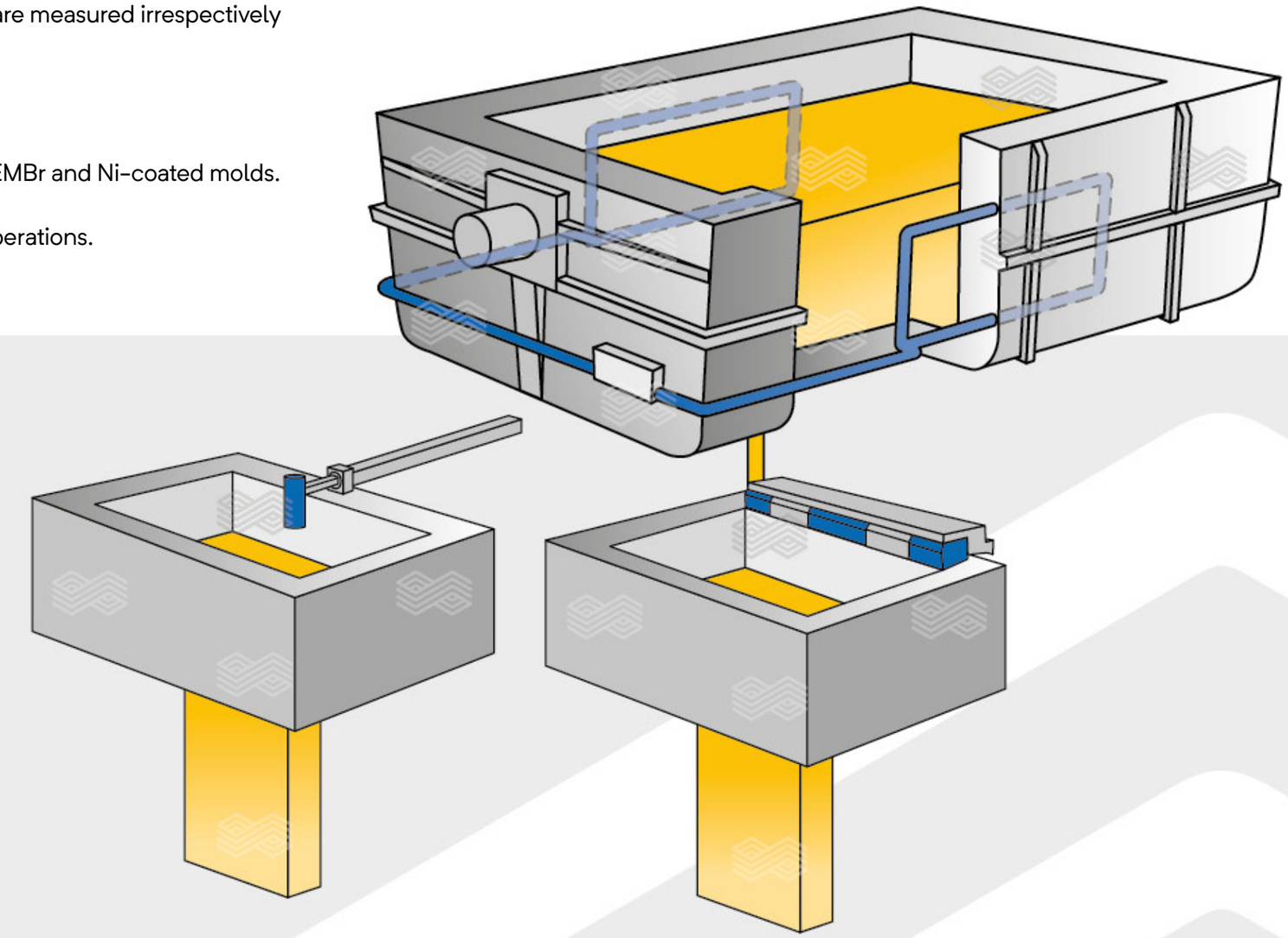
The EMLI-MouldLevel systems continuously monitors the steel levels in bloom and slab molds during casting.

The electromagnetic technology ensures that true steel meniscus levels are measured irrespectively of the amount of mold powder.

We offer both suspended and edge-mounted sensors.

The suspended sensor sensor system is compatible with the use of EMS, EMBr and Ni-coated molds.

The edge-mounted sensors ensure minimum interference with casting operations.



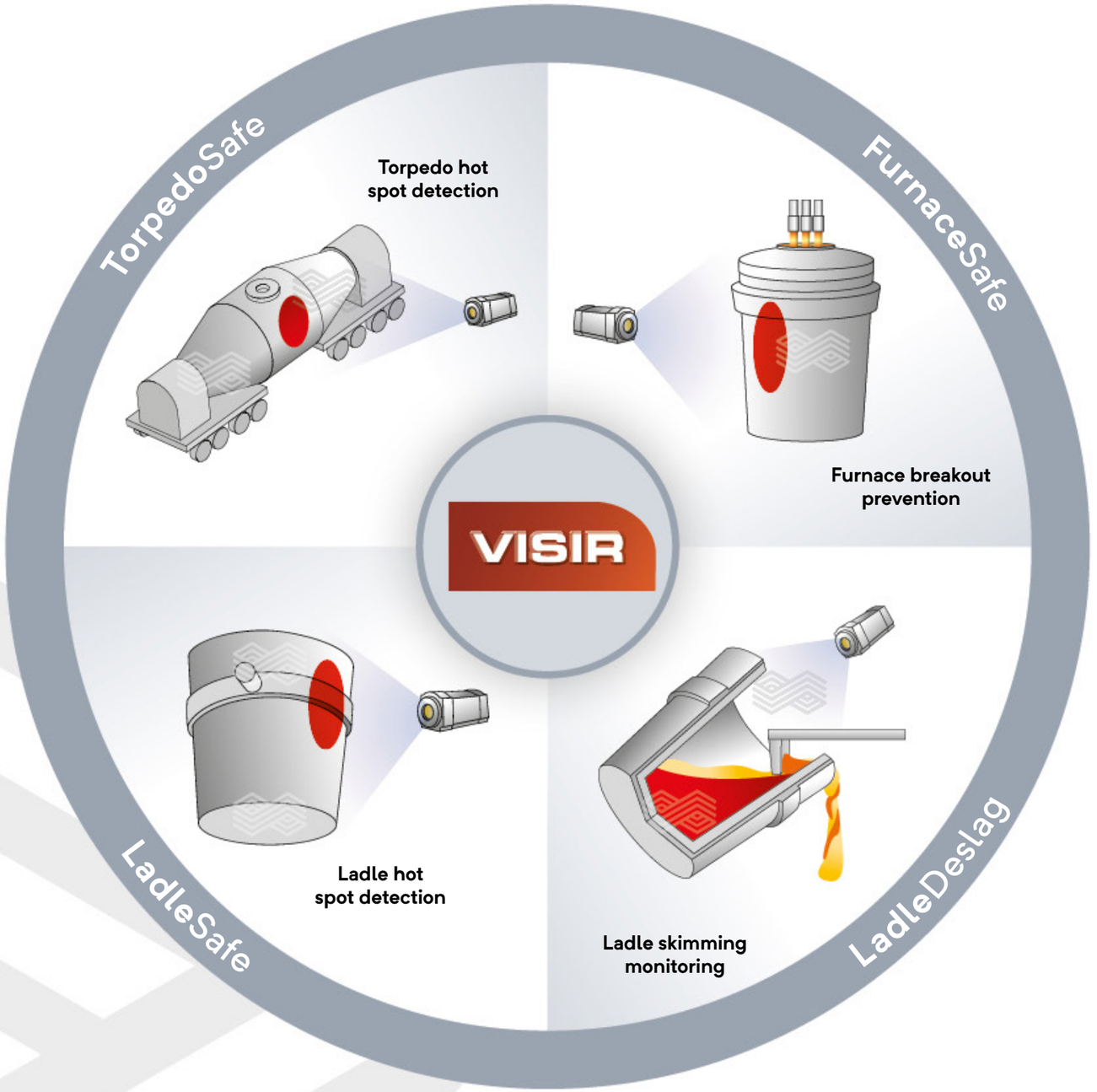
User Benefits & Advantages

- True steel meniscus level independently of powder thickness
- Fast true response time
- Automatic and fast calibration
- Can be used with EMS, EMBr and mold coatings

Content
EMLI
VISIR

VISIR — Vision and Thermographic Technology

- Our Vision and Infrared platform (VISIR) offers solutions for increasing safety of ladles and furnaces and improving the skimming performances.



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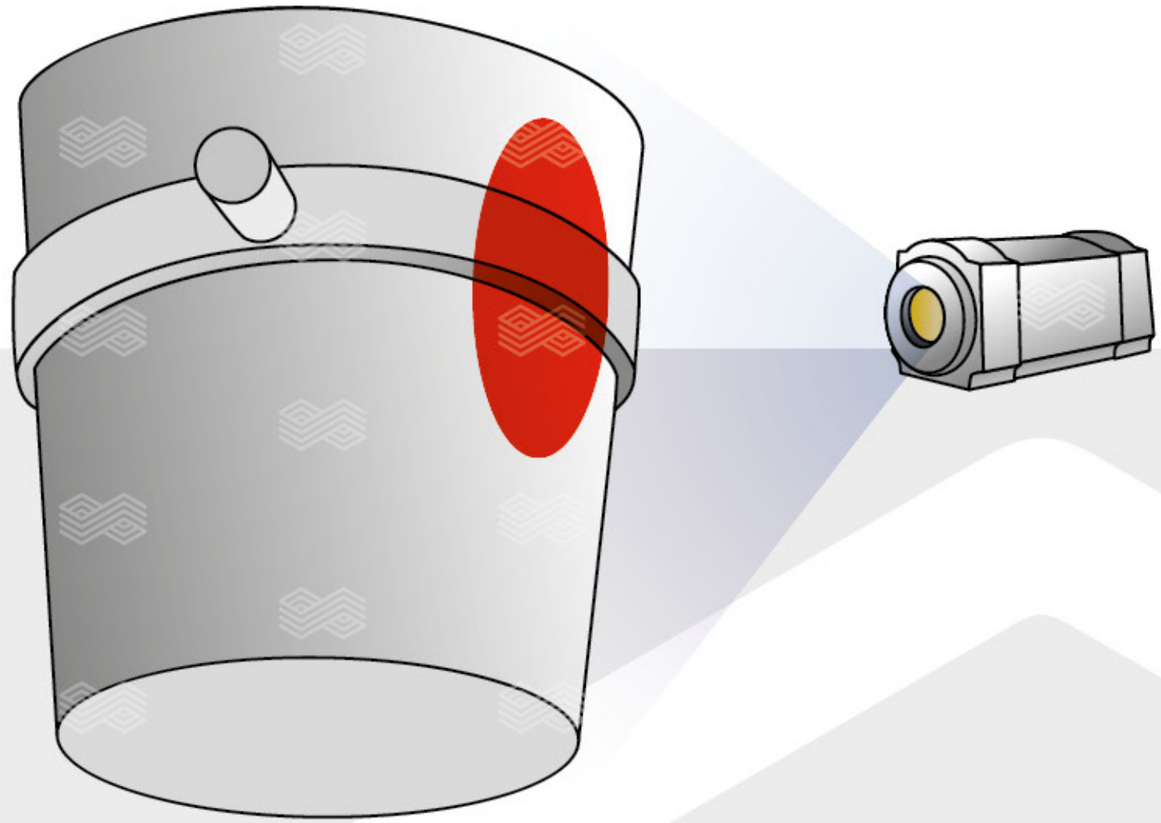
VISIR-LadleSafe

Ladle Hot Spot Detection

The risk of a ladle breakout will always be present in steelmaking with equipment damage, personnel injuries and loss of production as a consequence.

Eliminate dangerous and costly situations by scanning and evaluating the condition of each ladle in your fleet before sending it to the caster.

Using the historical database, refractory performances can be objectively evaluated and average ladle refractory lifetime can be increased in a safe way.



User Benefits & Advantages

- Hot spot detection and warning
- Maximize ladle refractory lifetime
- Integrated with plant PLC and network
- Maximizing safety in ladle handling areas
- Historical database open to process metallurgist

STEEL / MEASUREMENT SOLUTIONS

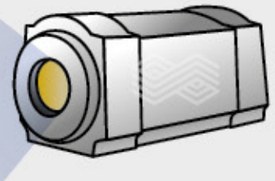
VISIR-FurnaceSafe

Ladle Hot Spot Detection

The VISIR-FurnaceSafe system system continuously monitors the furnace shell with over 200 000 measuring points and trends temperatures for the selected areas of interest.

The system automatically alerts you when early signs of hot spots are detected, helping you to handle the situation before it becomes a hazard.





User Benefits & Advantages

- Early "hot spot" detection and warning
- Used with LF, RH, EAF, AOD, LD/BOF
- Historical database open to process metallurgist

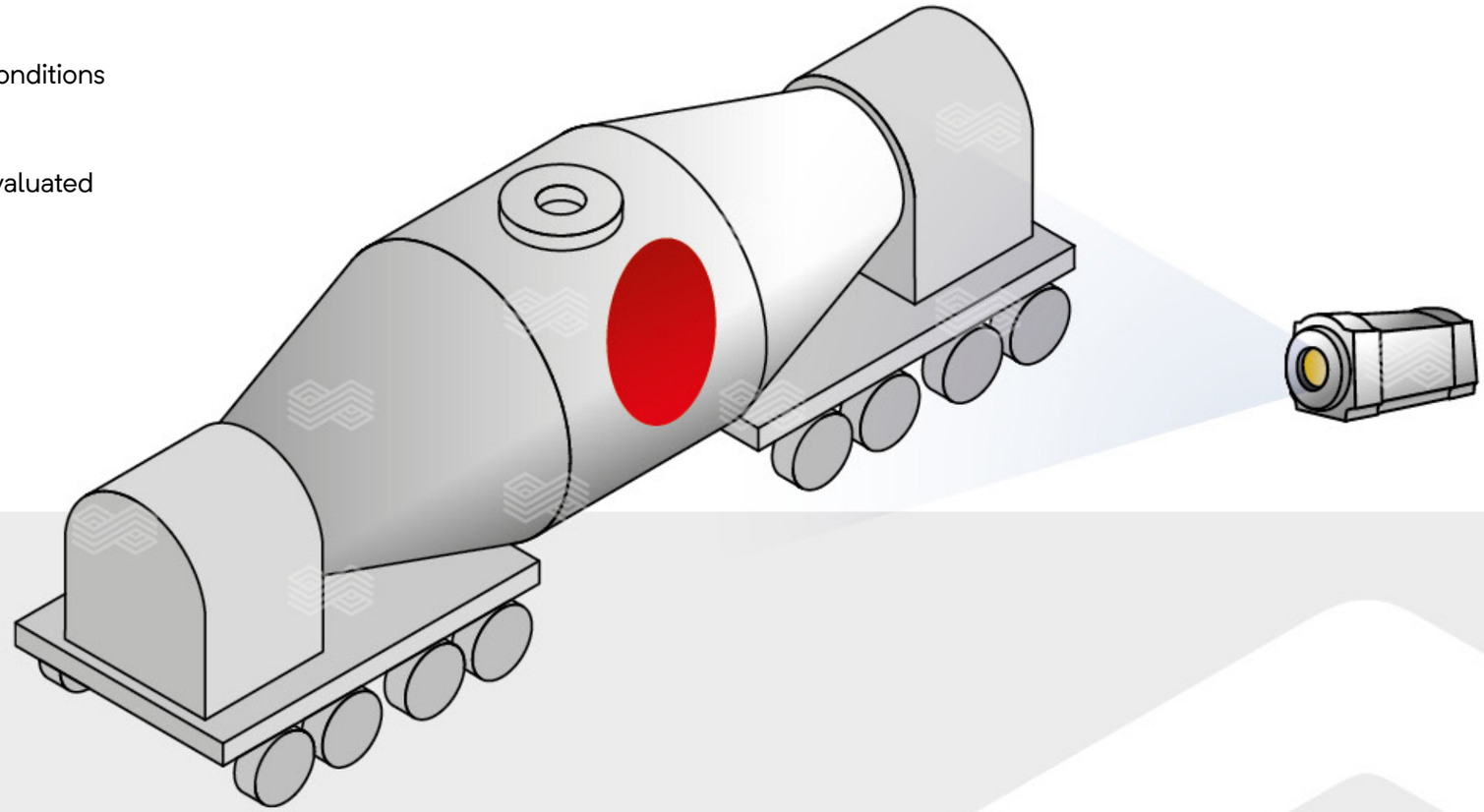
STEEL / MEASUREMENT SOLUTIONS

VISIR-TorpedoSafe

Torpedo Hot Spot Detection

Eliminate dangerous and costly situations by scanning and evaluating the conditions of each torpedo for every heat.

Using the historical database, refractory performances can be objectively evaluated and average refractory lifetime can be increased in a safe way.



User Benefits & Advantages

- Hot spot detection and warning.
- Maximizing refractory lifetime.
- Maximizing safety in torpedo handling areas.
- Historical data stored in open and searchable database.

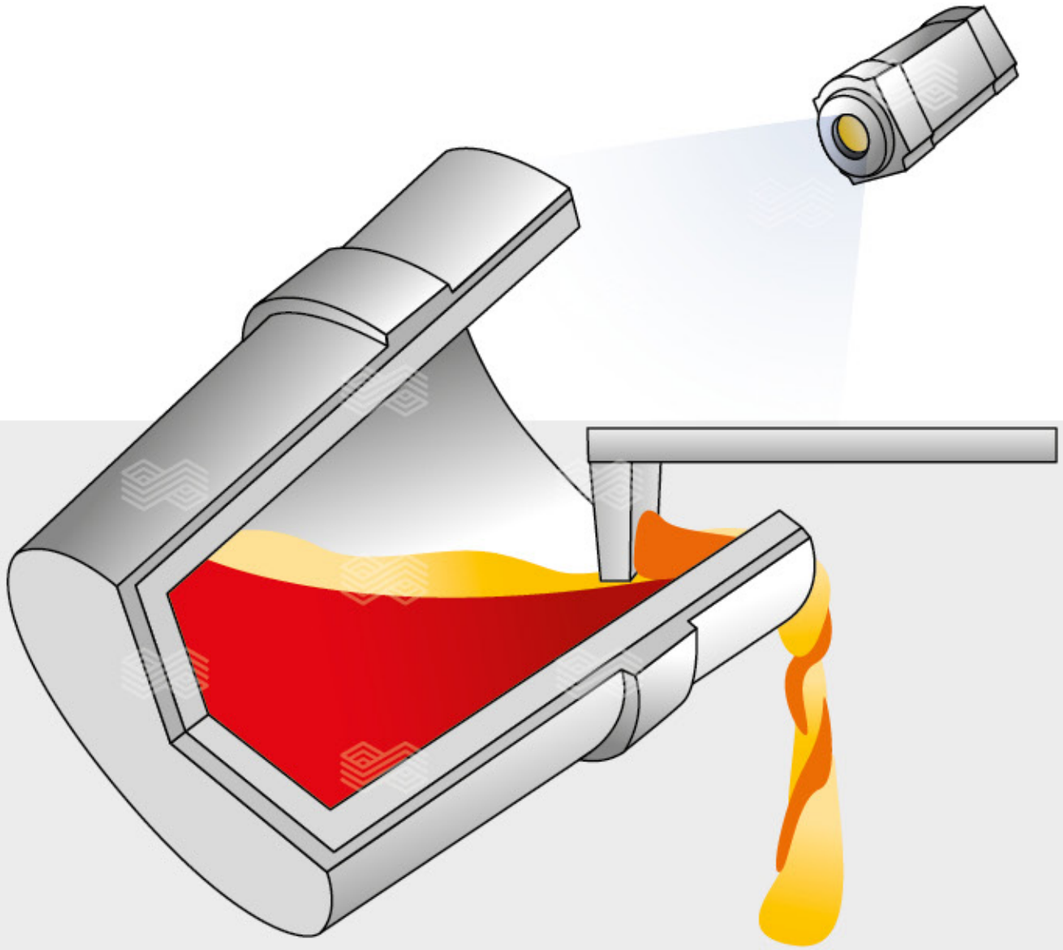
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VISIR-LadleDeslag

Ladle Skimming Monitoring

The VISIR-LadleDeSlag system is designed to monitor ladle deslagging operations in order to visualize and quantify the progress of the operation.

Skimming operators using the VISIR-LadleDeslag system can produce slag-free ladles consistently, independently of their experience and individual judgement.



User Benefits & Advantages

- Consistent and objective monitoring of deslagging process
- Historical data stored in open and searchable database
- Metal loss warning
- Yield increase

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