

# PIEPER

FROM ORE TO STEEL

SMART SOLUTIONS FOR THE STEEL INDUSTRY

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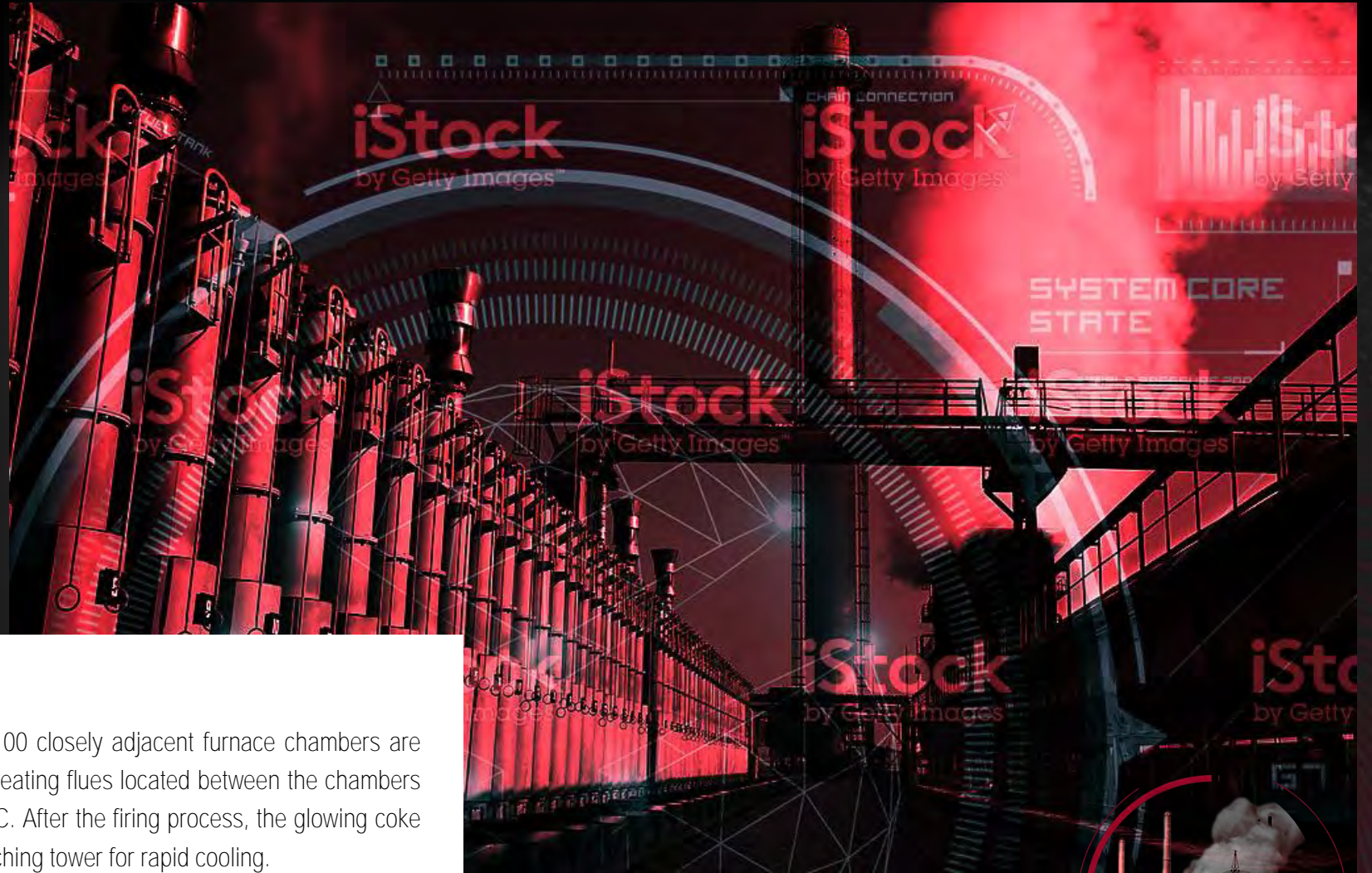
THE COKING PLANT

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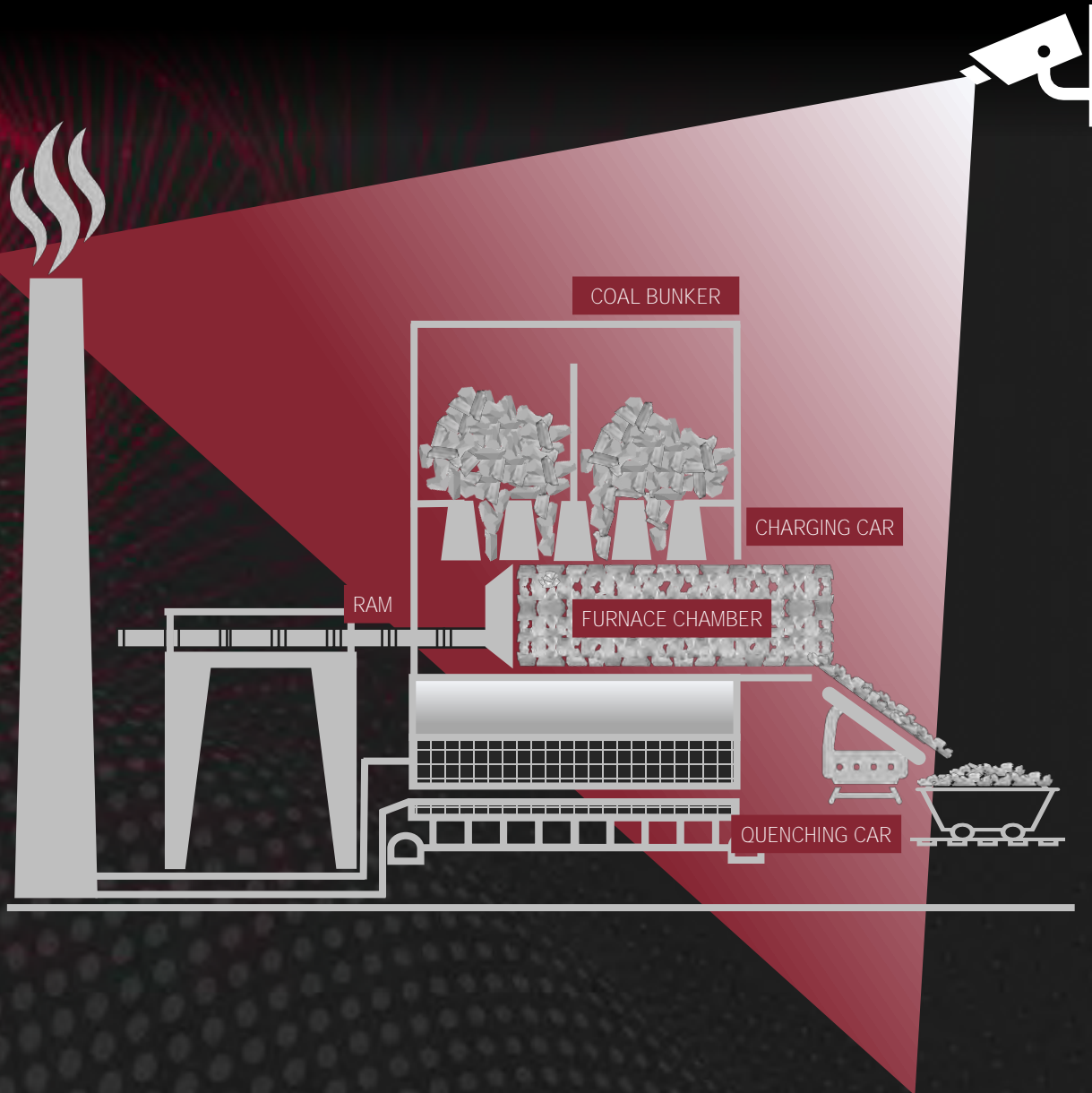
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## THE COKING PLANT

The heart of a coking plant is the oven battery. Up to 100 closely adjacent furnace chambers are filled with hard coal via a trolley running on the ceiling. Heating flues located between the chambers ensure that the coal is continuously heated over 1,000 °C. After the firing process, the glowing coke is presented into a quenching car and driven to the quenching tower for rapid cooling.



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## OVERVIEW CAMERAS

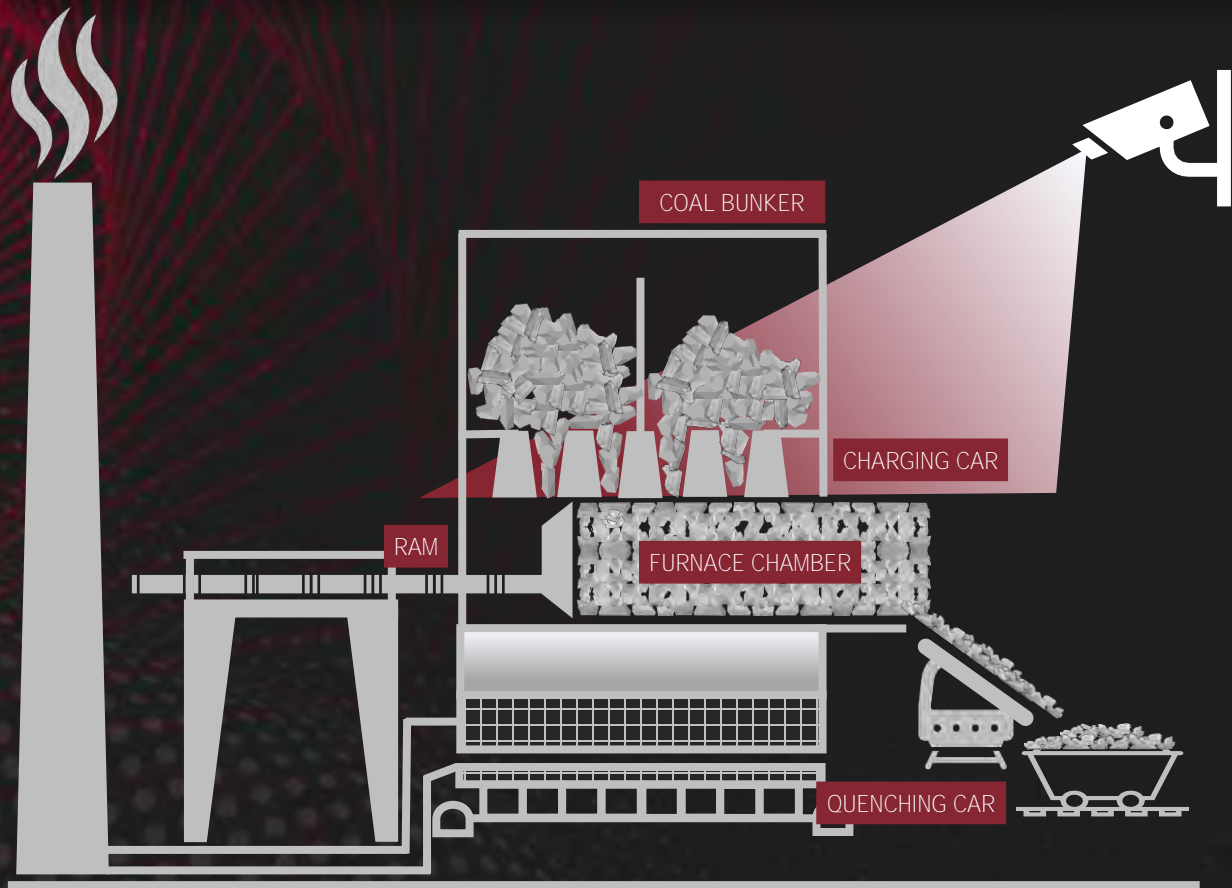
In **process monitoring**, which is geared towards detailed inspection and evaluation within a production chain, visual observation of the entire plant **shouldn't** be neglected. For this purpose, overview cameras are installed at strategic positions that they provide an **overall picture of the current production**. The images thus generated are transmitted live to the control center, so that any imminent malfunctions are detected at an early stage.

In addition to **avoiding cost-intensive production downtimes**, the **environment also benefits** here: a defective filter system can be detected more quickly, for example, as a change in the color of the exhaust gas often indicates a malfunction. The control center can thus take **immediate action and counteract dangers**.

At the same time, the use of surveillance cameras increases **work safety** for the specialist personnel directly working at the plants: The early detection of a malfunction, which the employee on site may not even be aware of, **reduces the risk of an accident to a minimum**.



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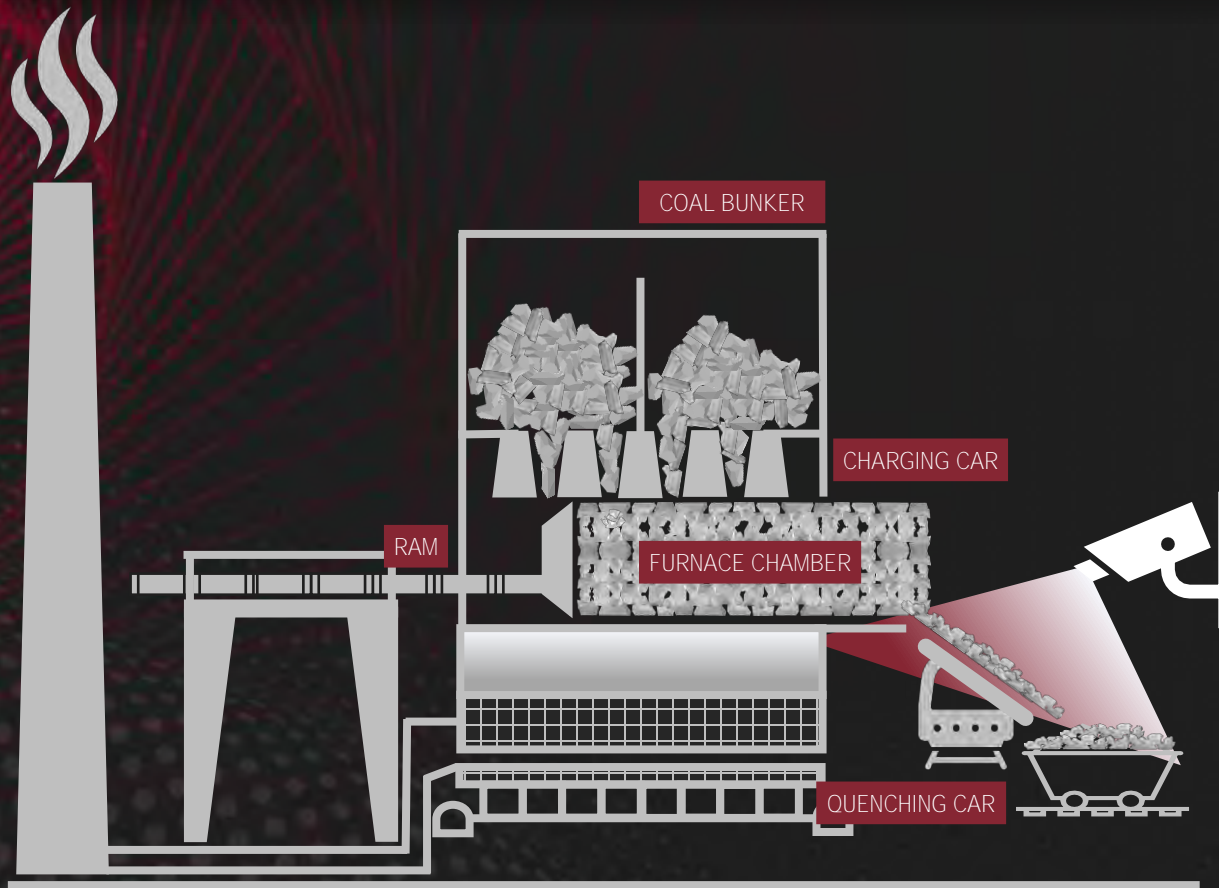


## MONITORING THE FILLING OPENINGS

One or more furnace probes mounted on the charging car observe the openings on the furnace roof; thus the level of a single coke oven can be checked at any time. This simplifies and speeds up the process and at the same time makes it safer for the workers, who no longer have to watch the level in the immediate vicinity of the hot oven. In addition, the furnace probes continuously check the openings for possible caking, which makes it difficult to fill the chambers.



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## QUENCHING CAR

A potential hazard in a coking plant is unevenly slaked coke. If the hot coke is transported on the quenching car to the cooking ramp, critical hot spots may form. Depending on the requirements, such embers can be searched by using a visual or thermographic solution – at best a combination of both.

The software-integrated visual cameras are set to send alarms in case of defined color deviations within the embers. Thermal cameras record and evaluate the temperature of the coke; if a temperature limit is exceeded, an alarm is sent to the control center.

This way, the operator can react early to a potential danger and, for example, move water canons to the appropriate place to prevent a fire. The hot spot is cooled and the coke can be transported directly to the blast furnace or coke storage without delay.



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