EMG
an elexis company

Meeting the processing demands

EMG Solutions for Metal Service Centres

EMG Solutions for Metal Service Centres

Our Solutions to Increase Your Production Yield

Steel, aluminium and other non-ferrous service centres are modern, high-performance processing companies with an extensive delivery and service programme of slit strips, sheets and blanks of hot-rolled and cold-rolled material, surface-finished strips and special alloys. They see themselves as a link between rolling mill operators and processing companies.

Figures from Eurometal 2017 indicated that already 45 % of the flat product material passes through metal service centres. In addition, in another report from Grandview Research[1] published in 2019 the global metal service centres market demand was estimated at 593,474.2 kilotons in 2018 and is anticipated to expand at a CAGR of 3.5 % from 2019 to 2025[1]. The relevance of this distribution channel therefore does not need to be emphasised further.

These metal service centres have to master special challenges because their most important customers, the automotive companies, are facing a paradigm shift. A decreasing share of steel in the automotive sector is expected, while at the same time the trend is towards more and more high-strength and ultra-high-strength steels with low thicknesses.

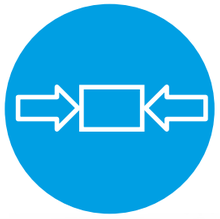
The advent of e-mobility and autonomous driving are also among the challenges. As a result, service centers must compete in the market by using the latest technologies and differentiating themselves in terms of service, quality, agility and flexibility.

In this white paper the interested reader will find an overview of the automation solutions offered by EMG Automation GmbH with a special focus on the needs of steel and aluminium service centres and independent flat metal processors.

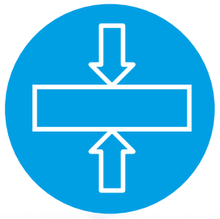
This includes basic strip guiding and steering control technologies for reliable operation of the various coil processing units, as well as a wide range of product solutions for quality assurance and increasing production yield in a metal service centre (MSC).

EMG Strip Guiding

EMG Width Measurement



EMG Thickness Measurement



EMG Lubrication Measurement

[1] *https://www.grandviewresearch.com/industry-analysis/-service-centers-market*

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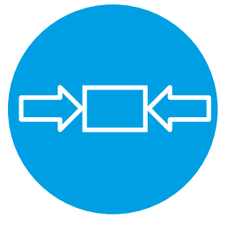
EMG Solutions for Metal Service Centres

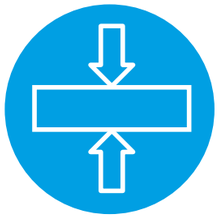
Your Needs define our Focus

➔ EMG's Strip Guiding Solutions assure the correct strip position

Do you need transparency about the strip & slit strip width in your process?

➔ Trust in EMG BREIMO & EMG iCAM® Width Measurement Solutions





Do you need security about the strip thickness in your process?

➔ Trust in the EMG iTiM Family for Online Thickness Measurement

Do you want to be sure that all material is oiled correctly and uniformly?

➔ Trust in EMG SOLID® Online Oil Layer Measurement

EMG Solutions for Metal Service Centres

Strip Guiding with EMG Solutions

Benefit from our long-term experience and wide range of solutions!

Strip Guiding with EMG Solutions

Higher Quality & Increased Efficiency by Reliable Strip Guidance

For decades, EMG has been the world's leading supplier to the metal industry when it comes to strip guiding and reliable strip guidance in the various process steps. Inductive and optical solutions are used in this area, as well as systems based on radar technology for strip centre or strip edge control.

For metal processing centres, EMG product solutions are essential for the controlled and trouble-free uncoiling and recoiling of high-quality strips. In addition, there is a wide variety of applications where the strip position must be reliably determined in order to ensure trouble-free transport of the strip through the processing line. An example is the strip guiding control in front of a side trimmer, which has a direct influence on the material yield. A strip guiding system always consists of three components: the sensor technology, the intelligent control, and the actuator technology. All three elements are offered by EMG - also as turnkey projects -, supplemented by the corresponding commissioning and field services and a long-term spare parts availability. With regard to the actuator technology, EMG offers both hydraulic and electromechanical solutions.

All in all, EMG's product portfolio includes an extensive range of solutions that are used by metal service centres and independent flat material processors worldwide. In the following chapters we present the essential building blocks of these EMG product solutions to the reader, summarise the essential technical data and outline the main fields of application.

This white paper concludes with some remarks on how to optimally prepare and implement a successful project in cooperation with EMG.

Key Challenges

The importance of strip guiding systems in service and processing centres for flat metal products lies in the fact that they are critical to the overall quality of the finished product. Proper strip guiding ensures that the strip is processed correctly, which leads to higher-quality products, fewer defects, and reduced scrap. In addition, strip guiding systems can help to reduce downtime and increase overall efficiency, which can have a positive impact on the bottom line of the service centre.

Some of the key challenges facing strip guiding systems in such centres include:

- Maintaining the proper alignment of the strip: The strip needs to be properly aligned throughout the processing line to avoid defects and ensure that the final product meets the required specifications.
- Ensuring uniform tension control: Strip guiding systems must help to allow uniform tension control throughout the process to prevent edge wave and other defects.
- Coiling quality: Allowing perfect uncoiling and recoiling of the processed material for achieving the end customer specifications.
- Coping with varying strip thicknesses and widths: The strip thickness and width can vary throughout the coil and much more important significantly after material change, which makes it difficult to maintain consistent processing and position measurement conditions.
- Managing the production speeds involved: Strip guiding systems need to be able to operate at high speeds while still maintaining guiding accuracy and reliability.

All these requirements for strip guiding systems are perfectly reflected by EMGs product portfolio.

In general, a strip guiding system always consists of a selection of 3 major components: sensors, electronics, and actuators.

Determining the strip centre or edge position – including controlling the strip position and movement – is the single most important goal for all strip guiding solutions. Based on decades of experience and around 1,500 guiding systems sold every year, EMG has developed a wide range of sophisticated optical, inductive, and radar-based sensors for achieving this goal.

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