



**LINCOLN
ELECTRIC**

AUTOMATION

ENSPECTOR

YOUR NEXT BIG UPGRADE.

Part Inspection, Quality Control & Sorting System

WHAT IS THE CHALLENGE?

It's not only a logistical challenge to manually check hundreds of parts for quality, but accurately sorting and placing them for inspection is burdensome as well.

Many companies are familiar with this scenario: Plates are distributed everywhere, and the product is waiting to be welded, but you can't find what you are looking for. The clock is ticking, mistakes happen, and damage is done.



TIME/COST
INTENSIVE



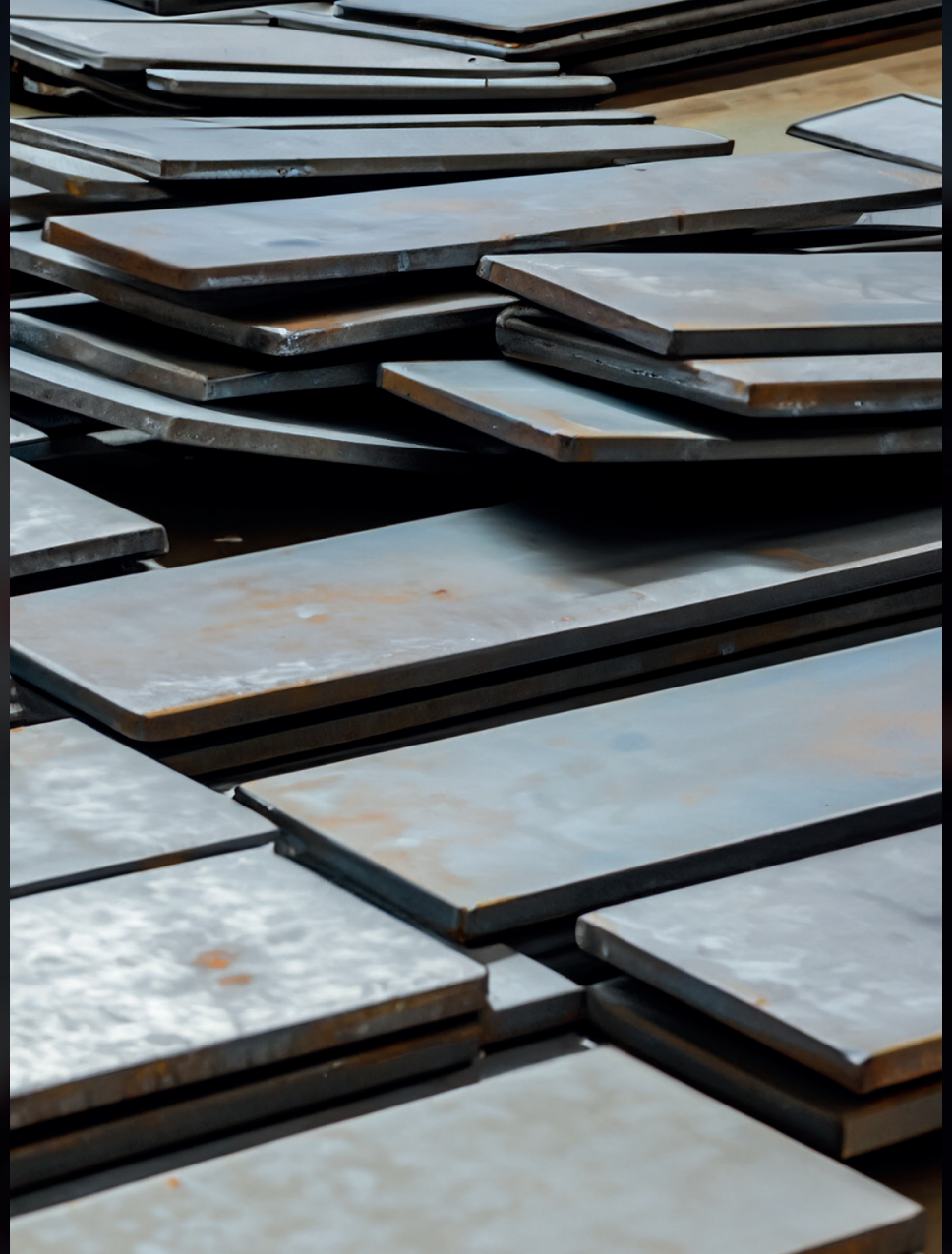
HIGHER RISK
OF ERRORS



DIFFICULT
QUALITY CONTROL



HEALTH AND
SAFETY RISKS



BEFORE: Sorting by hand is complex, time-consuming and cost-intensive.

THIS IS OUR SOLUTION FOR YOU.

At Lincoln Electric Automation®, we developed a system with Zeman™ that checks the quality of your parts, labels them as needed, and assigns them to the appropriate location.

They say: Quality over Quantity. We asked: Why not both? Operating with consistent quality checks for dimension and shape, outstanding laser precision, and the highest safety standards, the Lincoln Electric Automation Part Inspection and Quality Control System **ENSPECTOR™** is a worthwhile complementary machine for every business occasion.



SAVE
VALUABLE TIME



MAKE IT
A ONE-PERSON-JOB



REDUCE
ERRORS

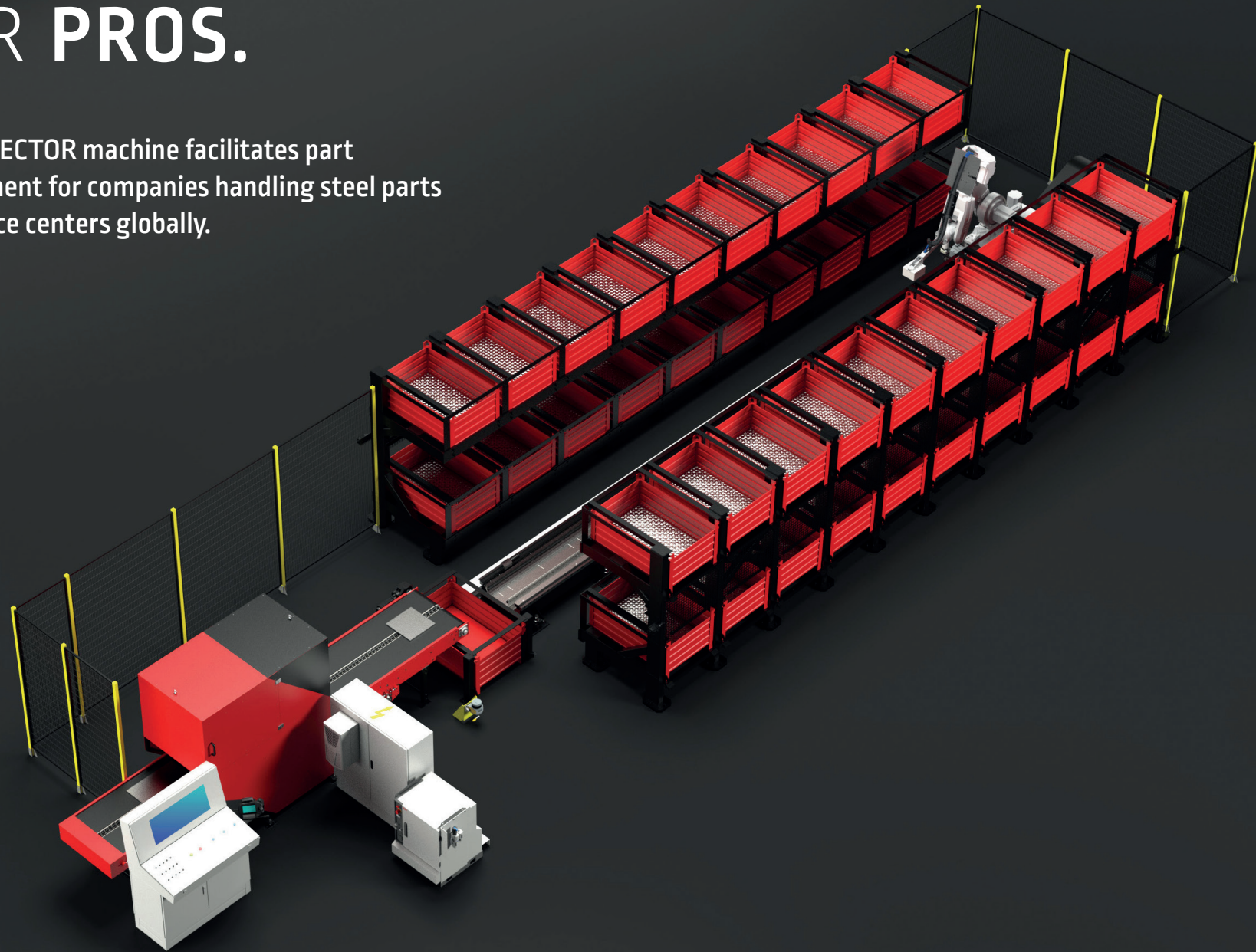


IMPROVE
SAFETY STANDARDS

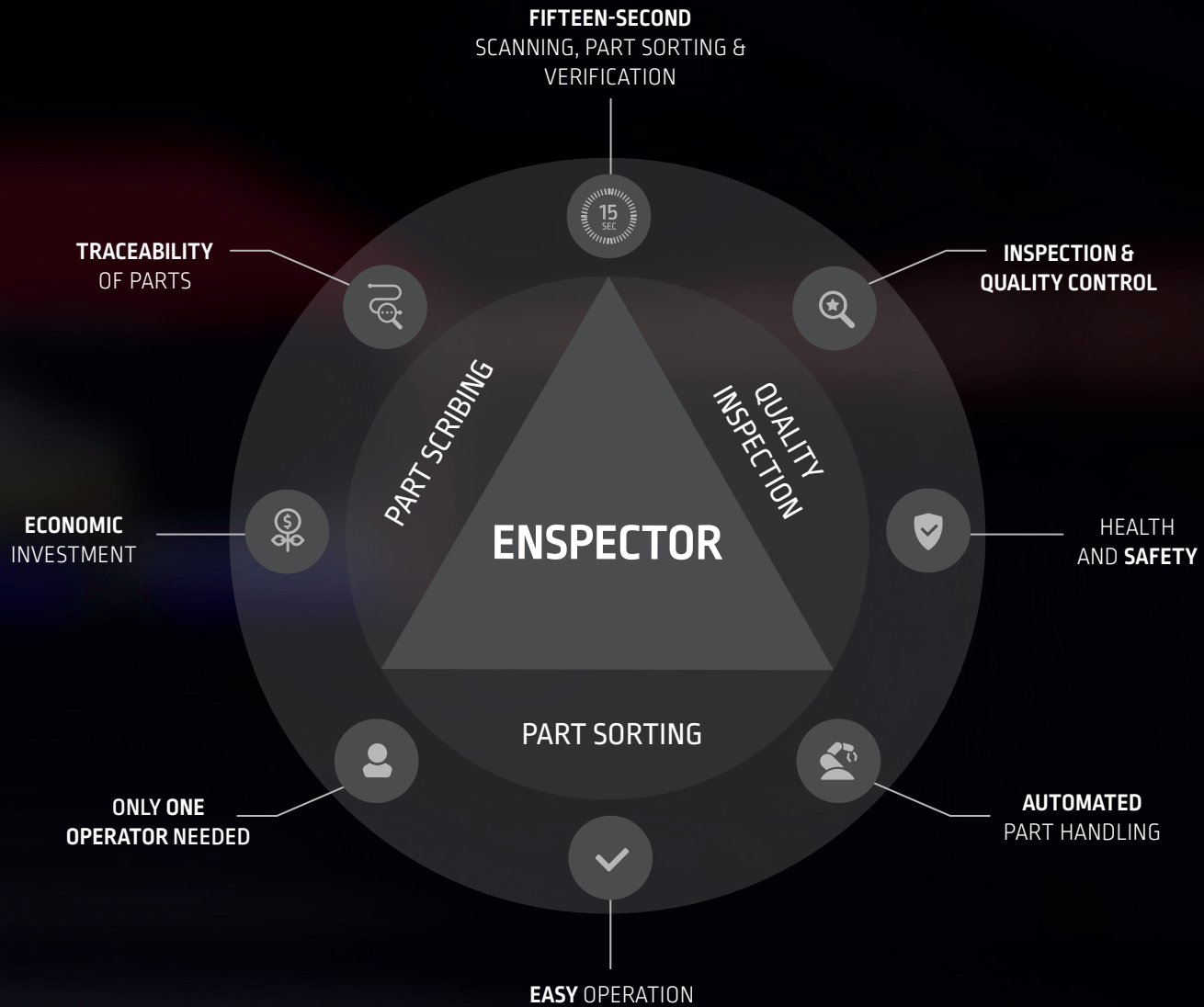
AFTER: Meet quality expectations on every part, and stay faultlessly organized.

ENGINEERED FOR **PROS.**

Our ENSPECTOR machine facilitates part management for companies handling steel parts and service centers globally.



ENSPECTOR VALUES.

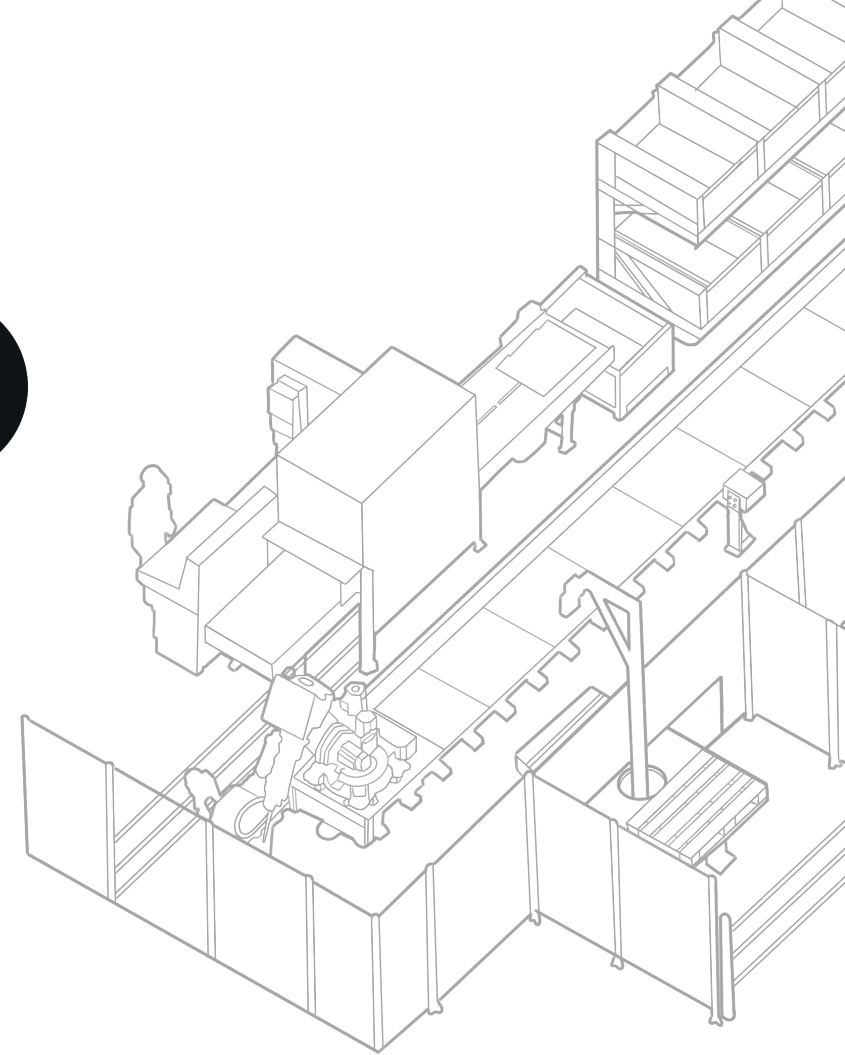


PROCESS OVERVIEW.



SMART SCANNING SYSTEM

Identify parts based on their actual dimensions and shape, assign them to the correct job number, and validate their quality to the job's specifications.



1

STARTING

After importing and evaluating the desired sorting method data, the sorting process for individual parts can begin.

2

SCANNING

Each individual part is scanned and identified based on its characteristics & dimensions. The measured dimensions are compared with existing and preset 3D data. For best results, all parts must be placed one by one on the continuously moving conveyor belt.

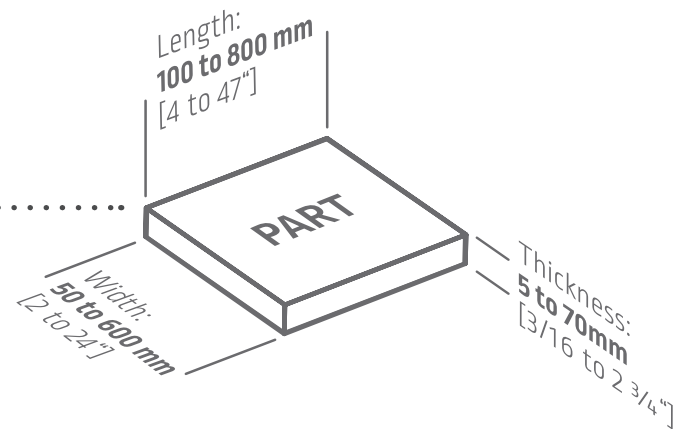
3

ASSIGNING

Whenever the actual measured dimensions are within the customers' defined tolerances, the part will be automatically matched with the dedicated part in the system and assigned to its drop off location.

Max. weight per part: 80kg (175lbs)
Operating Speed: 250 mm/sec (11" per sec)

Accepted part dimensions



4

REPEATING

Once all defined parts are scanned and assigned, the bin will be labeled as ,complete' in the system. The bin can now be removed from the rack of the system and replaced with a new one.

THE OPERATING SOFTWARE.



The Lincoln Electric ENSPECTOR Software is able to collaborate with other MRP import methods and can easily communicate with other Lincoln Electric products .

Based on the selected sorting method, the XML-File (Zeman export) or a defined excel spreadsheet is needed to assign the scanned parts to a bin. Depending on available information, the parts can either be assigned to bins, beams, customer, fabrication stage or batches.




EASY IMPORT.

MRP IMPORT: This import method uses an EXCEL-generated file from an MRP software.


The MRP software associates .nc files to import the required data and enable various ways the parts can be sorted.

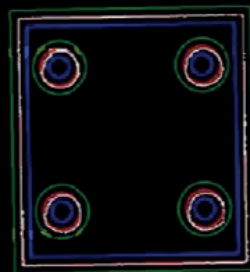
Depending on the available information, individual parts are sorted per beam, fabrication stage, customer, batch, lot, sequence, thickness, part type etc.

GET DETAILED SCANNING RESULTS

 NOMINAL DIMENSIONS

 PRESET DIMENSIONS

 ACTUAL DIMENSIONS



UPGRADE THE SYSTEM.



OPTIONAL **MARKING UNIT**

Labels identified parts with letters and part numbers.



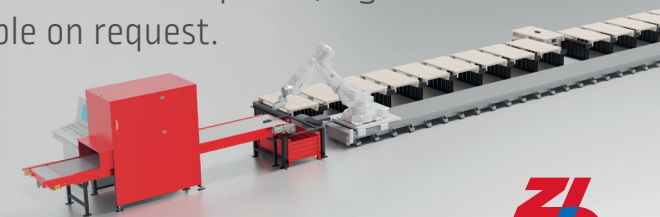
OPTIONAL **PALLET ROTATOR**

Switches empty with full pallets and automatically scans parts.



FURTHER OPTIONS

Alternative ENSPECTOR configurations, e.g. sorting onto pallets, and additional options, e.g. AGV's, RFID, are available on request.



AUTOMATE WITH THE MARKING UNIT.



MARK AN AREA OF 50 X 50MM [2" X 2"]

The marking unit is equipped with a carbide metal needle pin and can scribe characters on identified parts before sorting.

+ 10 SECONDS PER PART

Sorting time to scribe 10 characters, e.g. part numbers on one part.

SUPPORTED MEASUREMENTS

The part needs to have a free area of 50 x 50mm [2" x 2"].

HOW DOES IT WORK?



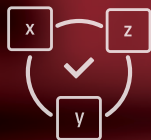
You decide which parts get marked and where it's necessary. E.g. parts which will be attached by the Zeman Steel Beam Assembler don't need marking.



Increase the production output on the plate processor, as no further scribing is needed on that machine(s).



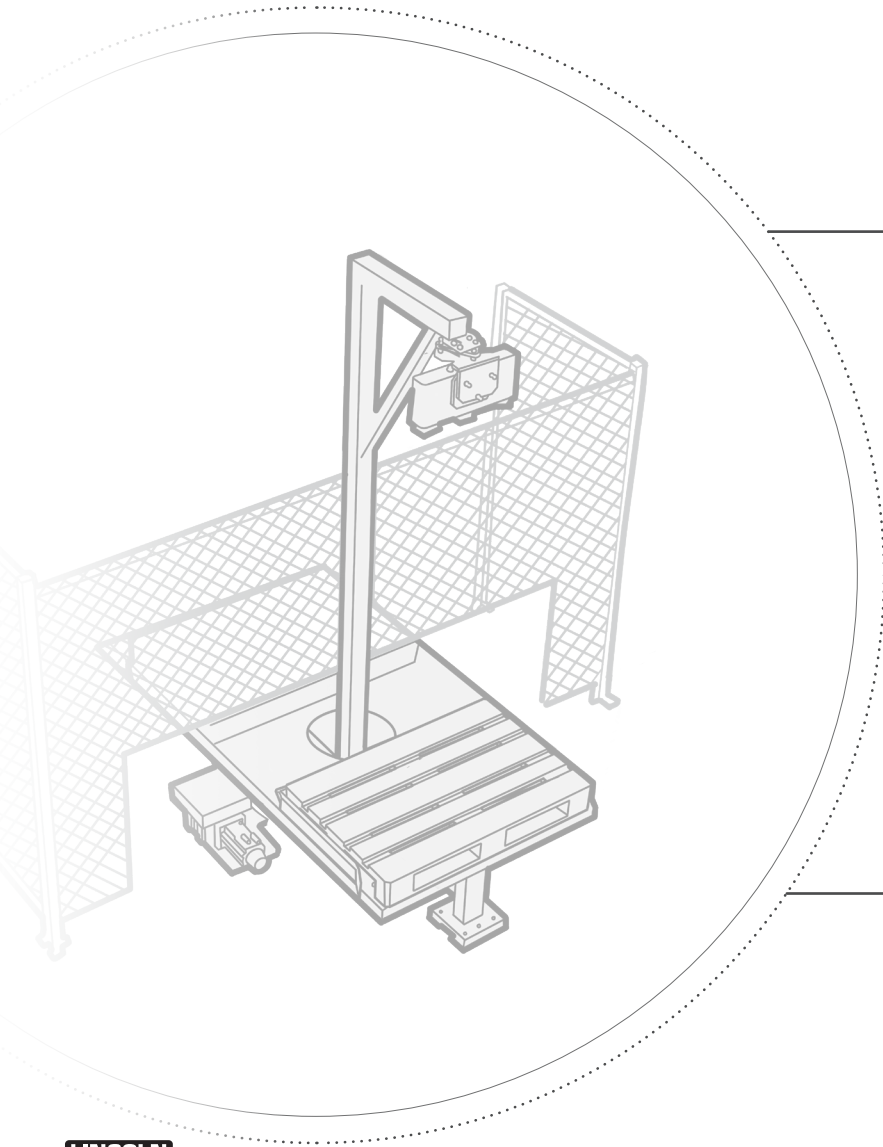
Parts will be recognized based on their measured dimensions prior to receiving labeling.



System allows scanning & marking of inhouse & third-party produced parts.

„EVALUATE AND SCRIBE PART NUMBERS
AUTOMATICALLY ON IDENTIFIED PARTS“

AUTOMATE WITH THE PALLET ROTATOR.



SEAMLESS

Loads a new pallet while the ENSPECTOR continuously sorts parts.

MATRIX MAGNET

Able to individually pick, place & position different sized & weighted parts with only one tool.

CONTINUOUS OPERATION

No operator needed to manually place parts on the conveyor belt.

HOW DOES IT WORK?

1

The operator loads the rotator with parts needed for the job, eliminating manual feeding and ensuring an automated workflow.

2

The mechanical pallet rotator automatically changes between an empty and a full pallet of unsorted parts.

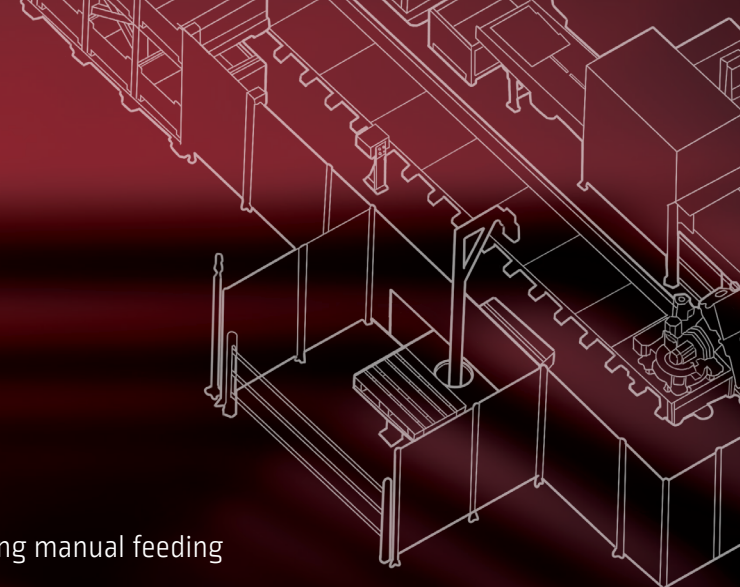
3

A 3D scanner recognizes the position of each individual part allowing the handling robot to pick one by one and continuously feed the ENSPECTOR.

4

Increase safety standards by reducing manual work.
No part lifting needed.

„EXCHANGE EMPTY PALLET AGAINST
FULL ONES **SEAMLESSLY** “

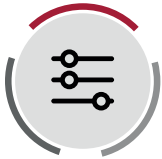


CUSTOM SOLUTIONS

„I HAVE OTHER REQUIREMENTS“ **LINCOLN ELECTRIC HAS YOU COVERED.**

We understand that every business has its unique challenges and opportunities. That's why we specialize in creating custom solutions tailored specifically to your needs.

„WHY CHOOSE ZEMAN CUSTOM SOLUTIONS?“



PERSONALIZED APPROACH

We take the time to understand your business, goals, and challenges. This ensures that the solutions we provide are perfectly aligned with your objectives.



EXPERT TEAM

Our team of experts brings years of experience and a wealth of knowledge in various industries, ensuring that you receive the best possible guidance and support.



INNOVATIVE TECHNOLOGY

Leveraging the latest in technology, we deliver solutions that are not only effective but also scalable and future-proof.



COMPREHENSIVE SUPPORT

From initial consultation to implementation and ongoing support, we are with you every step of the way.



WORKING WITHIN OUR ECOSYSTEM



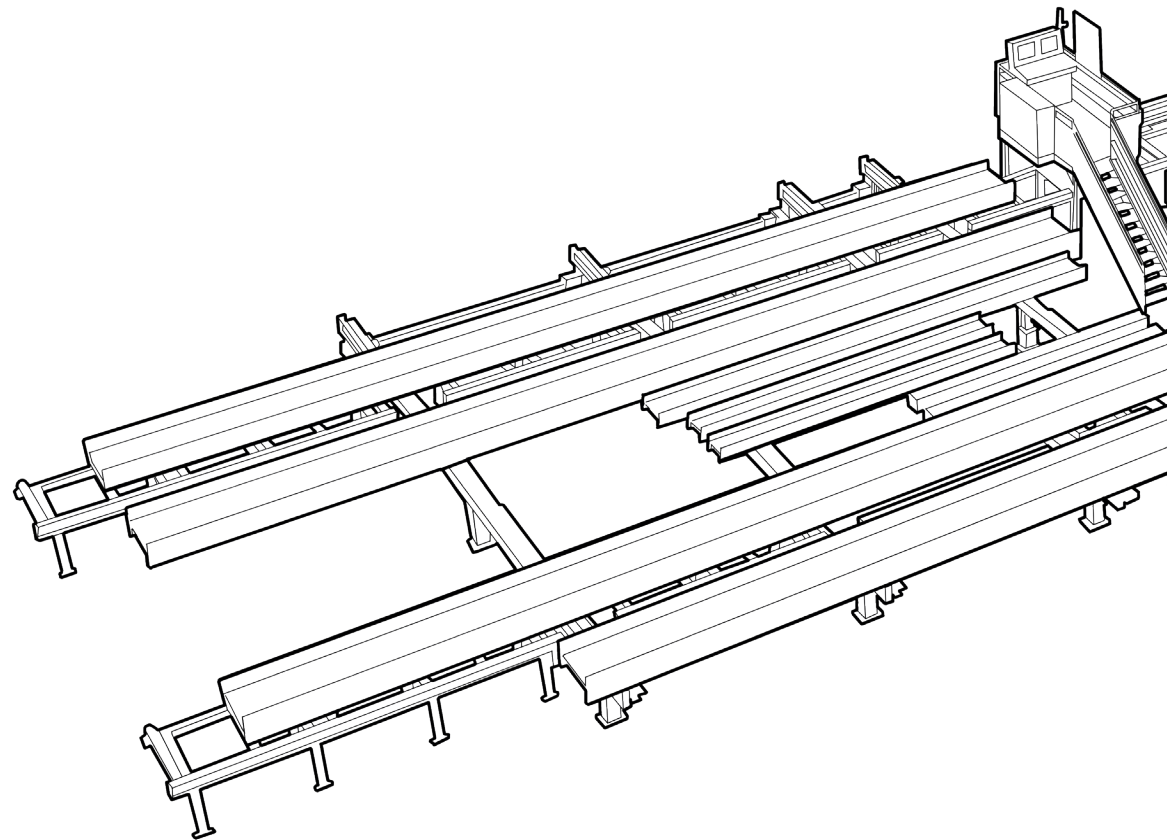
The ENSPECTOR machine was developed together with our Zeman products and can therefore easily be integrated into a Zeman system.

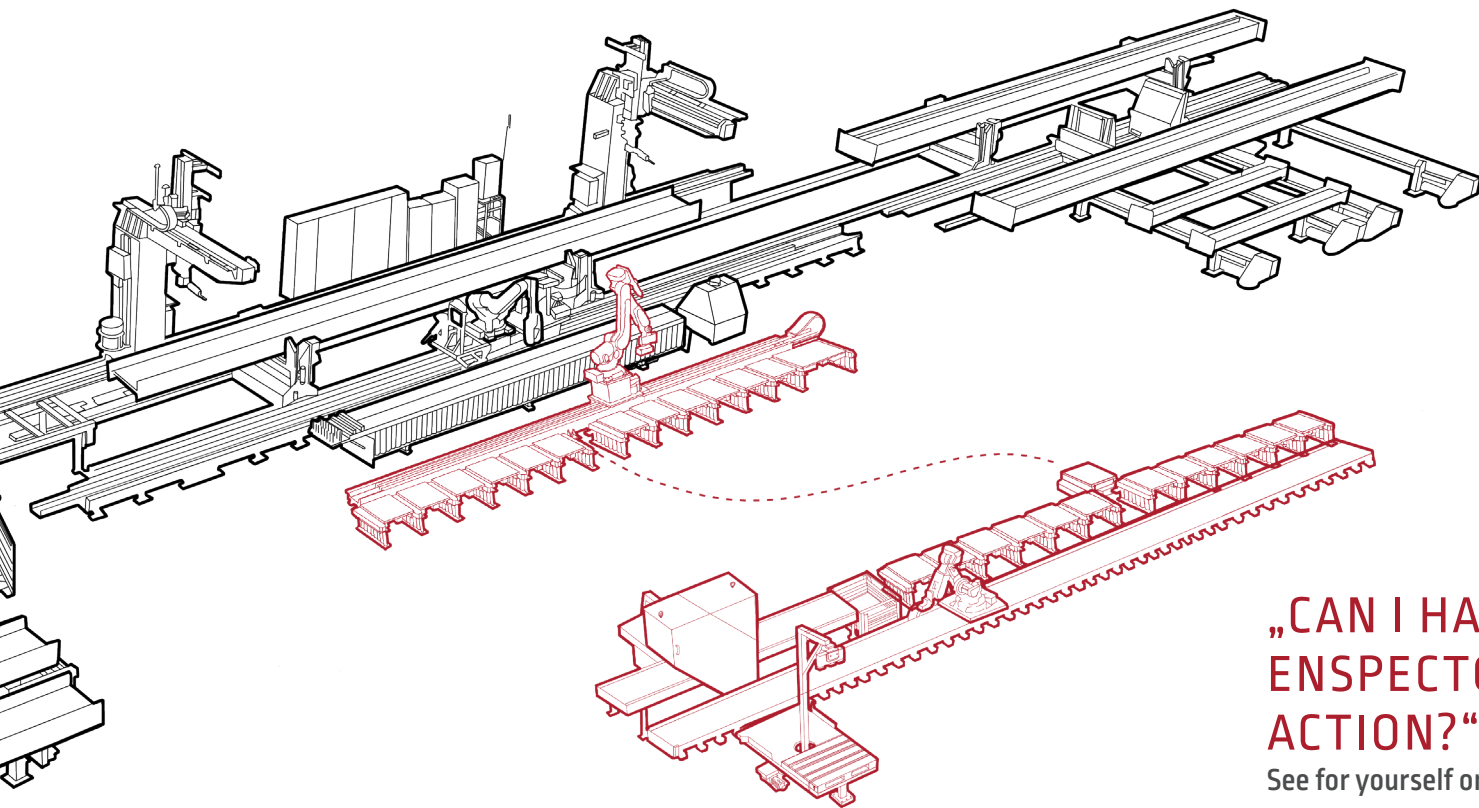
OUR SOFTWARE

With the purchase of a Zeman ENSPECTOR machine, we provide you with our in-house developed software: **ENSPECTOR Control**, **ENSPECTOR Sort**, and **ENSPECTOR Scan**, which we created explicitly for this machine.

OPTIMIZED WORKFLOW

Easily Import data through a Zeman interface from your desired 3D software (such as Tekla, Bocad, SDS, Advanced Steel). All parts are automatically assigned when using the Zeman interface. Changes on the parts assignment can be effortlessly done by "Drag & Drop".





„CAN I HAVE A LOOK AT THE ENSPECTOR SYSTEM IN LIVE ACTION?“ **YES.**

See for yourself on-site! Get in touch with our sales team to schedule a live demo near you. Alternatively, take a Virtual Factory Tour here:

<https://lincolnelectriccutting.com/virtual-factory>

LINCOLN ELECTRIC & ZEMAN

It's the perfect combination: Rely on the Zeman ENSPECTOR machine to check and organize your steel parts before welding them with Lincoln Electric PythonX® structural systems or Cooper™ Cobot systems.



ZEMAN SERVICE & SUPPORT.

With every machine bought from Zeman, you get the peace of mind that our expert engineers are available to support your operations.



WE PROVIDE FULL SUPPORT **WORLDWIDE**

- ✓ 24/5 remote support
- ✓ Fully trained field service engineers
- ✓ Fast spare parts fulfillment
- ✓ Online courses and trainings

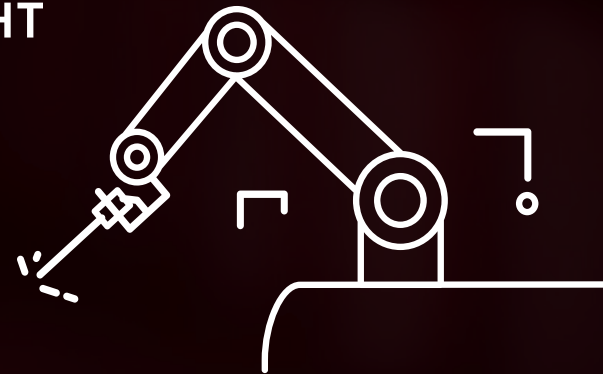
JOIN THE INNOVATIVE WORLD OF ZEMAN MACHINES!

Custom state-of-the-art tailored solutions set us apart from the rest.

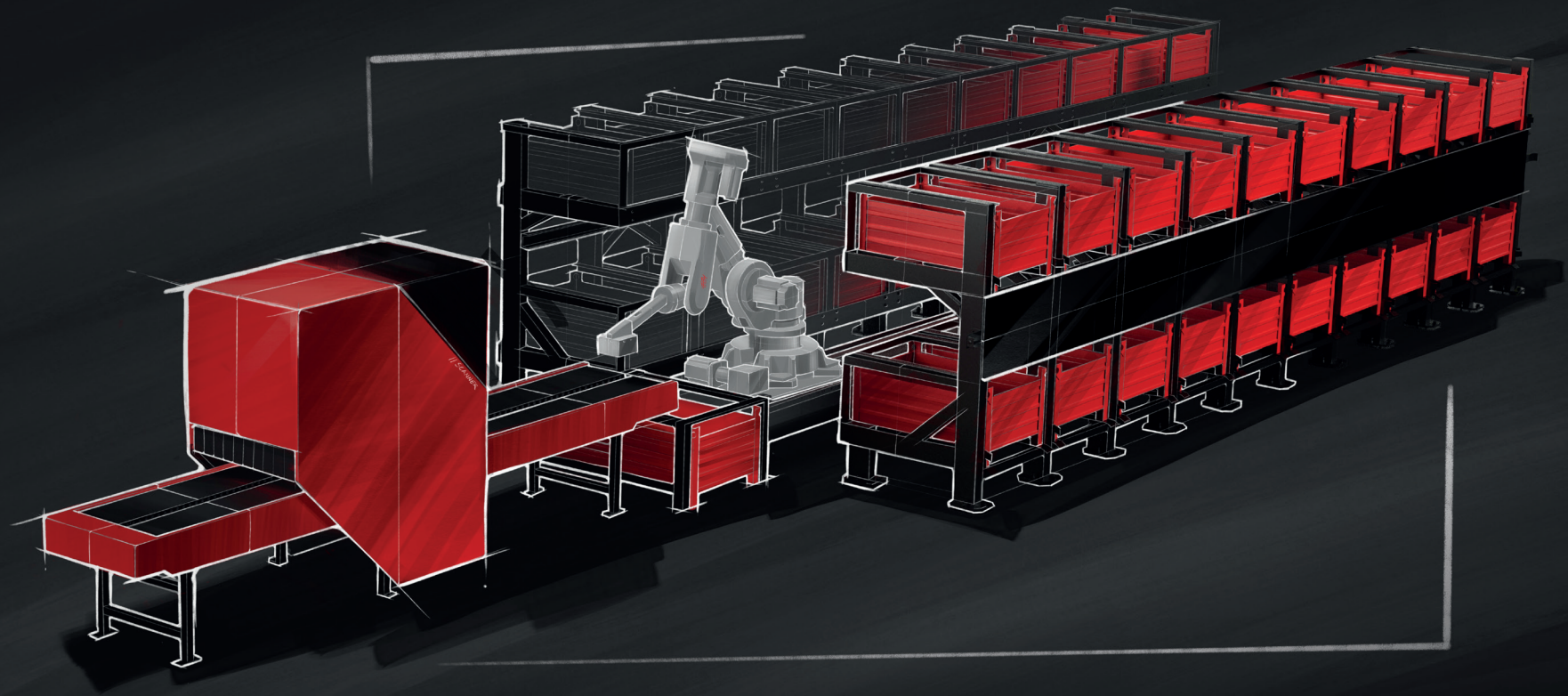
WE COLLABORATE WITH OUR
CUSTOMERS TO DEFINE **THE RIGHT
SYSTEM FOR THEIR NEEDS.**

We pay attention to:

- ✓ Given surroundings and onsite conditions
- ✓ Your future expansion plans
- ✓ Process implementation



TAKE EFFICIENCY TO THE NEXT LEVEL.



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