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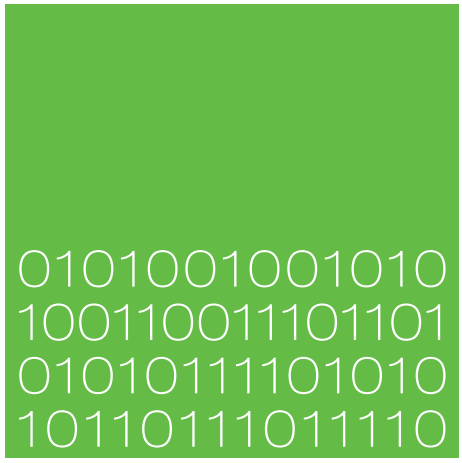
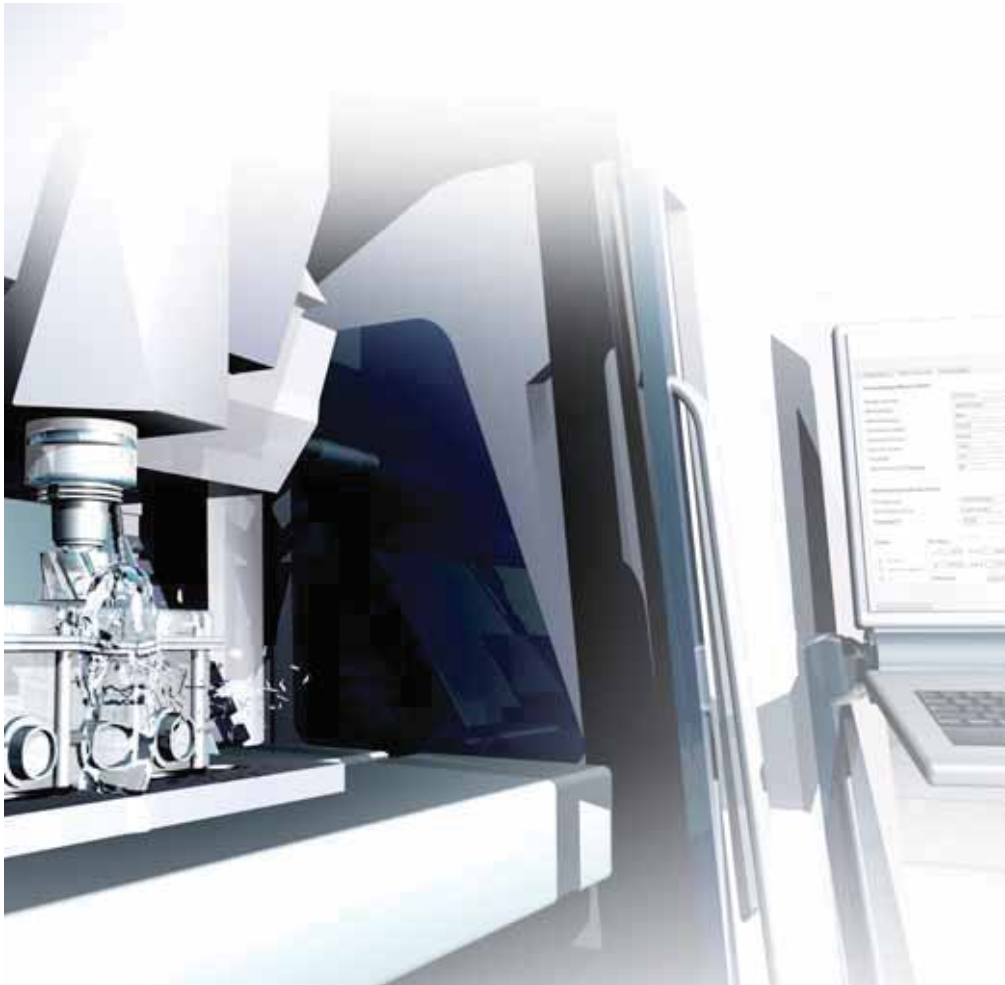
RFID Machine Tool Identification

Improve productivity with accurate and efficient tooling information





Balluff Industrial RFID

Manage your tools and increase your productivity

Today's machining centers and systems are designed to provide maximum productivity with minimum downtime and scrap. Balluff's industrial RFID-based Tool ID allows you to take full advantage of today's advanced machining center capabilities to maximize your investment and productivity. Balluff's Tool RFID methodology removes human error from the process to reliably automate the exchange of tool data between presetter and machine to create a truly visible closed loop production system. Now each tool carries its individual data such as tool life, tool chain pocket location, and offset data, as an individual pedigree. This prevents incorrect manually entered data from causing a loss of tool productivity, increased scrap, and in some cases, it even prevents damage to the tool or machine itself.

For over twenty years, Balluff has been helping companies like yours profit from the use of automated Tool ID. Let us show you how RFID based Tool ID can increase uptime and productivity with one of the fastest Return on Investments you can make. Automated Tool ID also opens the door to many other productivity advantages, including automatic tool tracking and tool room automation, for even greater efficiency, productivity, and profitability in your process.

Maximize tool utilization

RFID based Tool ID maximizes tool utilization by ensuring:

- Precise, up-to-date tool life information
- Accurate transfer of tool offset data
- Accurate reporting of tool data back to statistical databases
- Continuous tool tracking to maximize quality and reduce tool inventory requirements

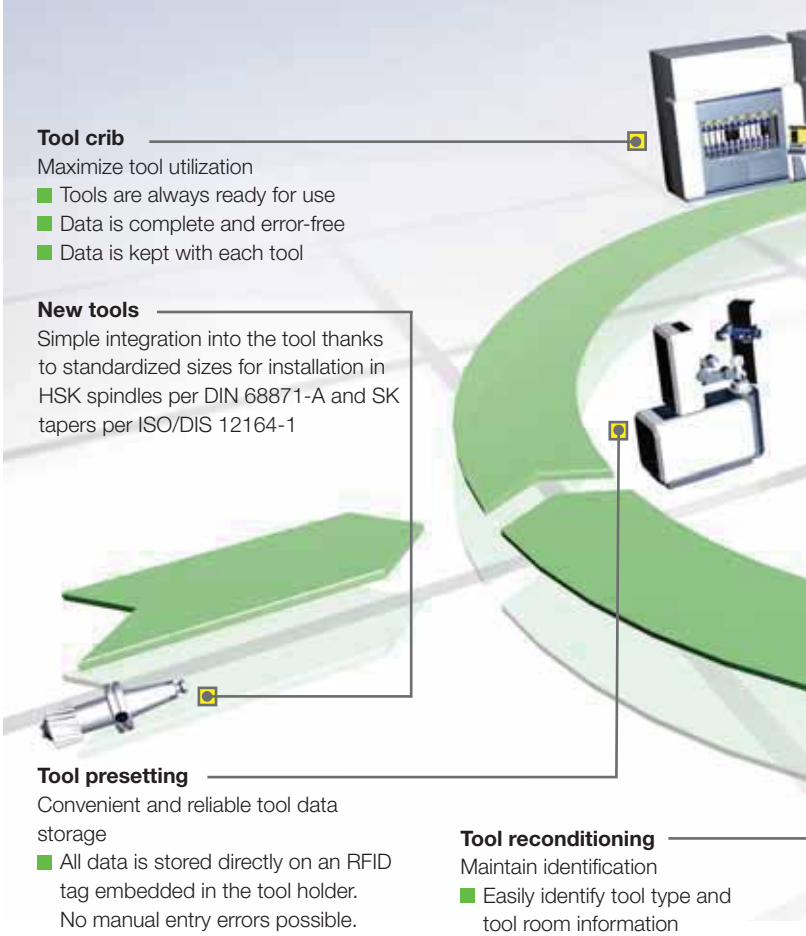
Minimize human error

Paperless tool data transfer ensures absolutely reliable data:

- Eliminates human data entry errors
- Accurately carries data with each tool regardless of its location
- Automates transfer of data from presetter to machine
- Can recall tool data from the tool any time without the need for database look-ups

Tool Identification with Industrial RFID
Improves quality
Increases efficiency

With reliable, up-to-date tool data, you can analyze the data to easily calculate costs, modernize tool quality systems and optimize tool utilization to increase productivity, maximize quality and efficiency. By storing relevant tool data with the tool, such as numbers, dimensions, tool chain pocket location and tool life, large amounts of data can be stored and moved more efficiently and without databases. This also allows the data to be moved from the presetter to machine significantly faster than any manual entry process with none of the errors, increasing machine uptime.



Tool crib
Maximize tool utilization
- Tools are always ready for use
- Data is complete and error-free
- Data is kept with each tool

New tools
Simple integration into the tool thanks to standardized sizes for installation in HSK spindles per DIN 68871-A and SK tapers per ISO/DIS 12164-1

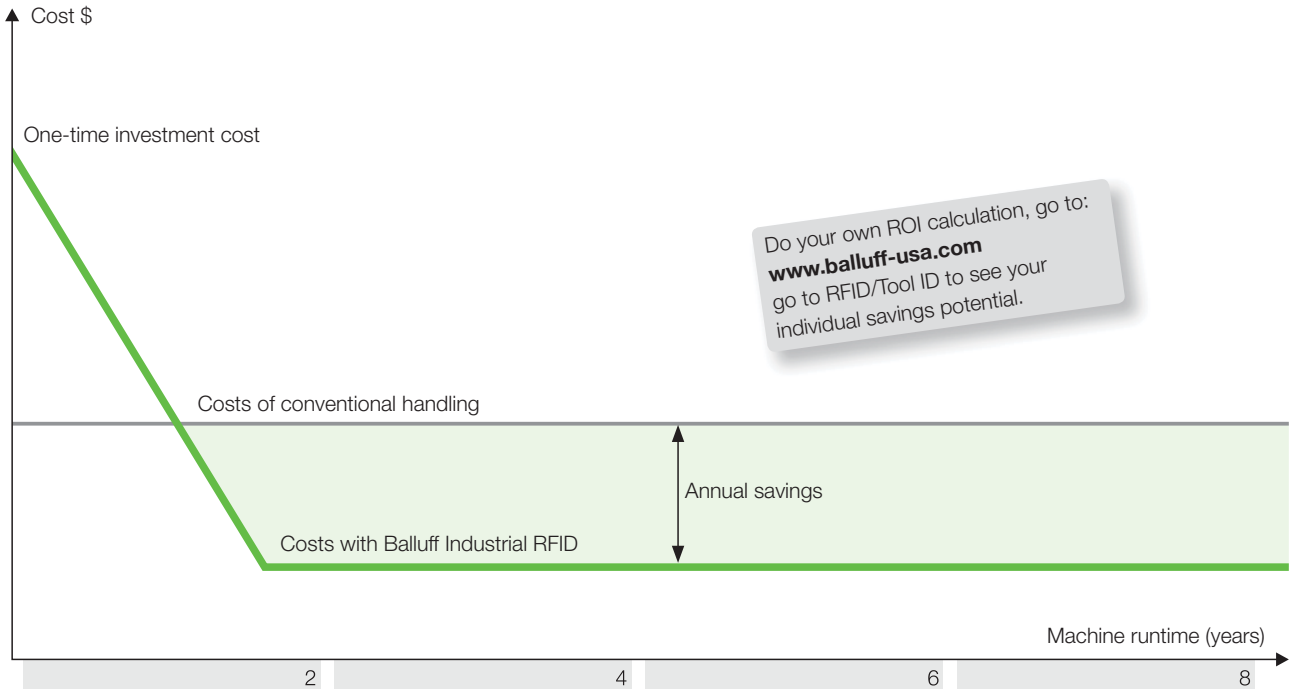
Tool presetting
Convenient and reliable tool data storage
- All data is stored directly on an RFID tag embedded in the tool holder. No manual entry errors possible.
- Tool data is permanently and uniquely associated with the tool

Tool reconditioning
Maintain identification
- Easily identify tool type and tool room information
- Store tool recondition or sharpening information

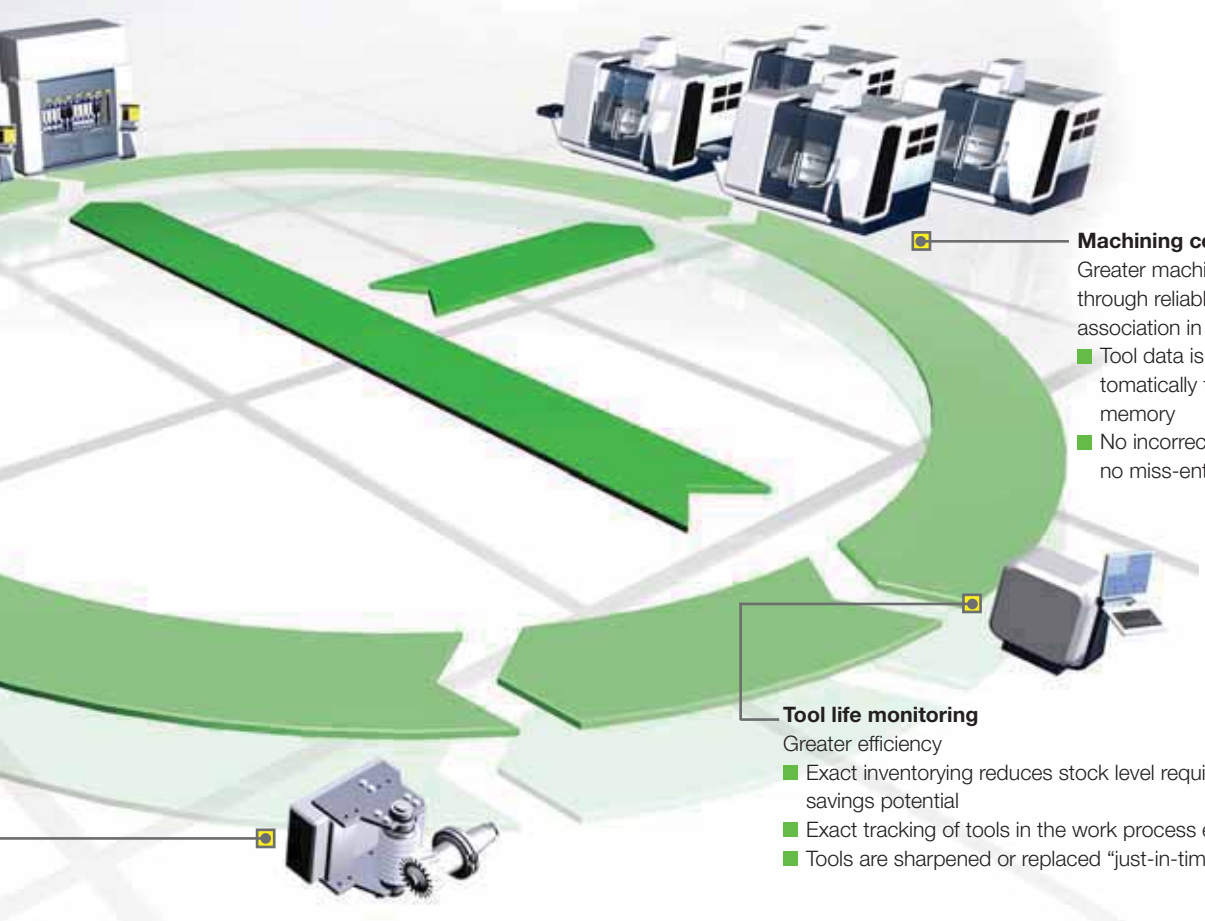
Tool Identification with Industrial RFID
Reduce costs

Compare Industrial RFID tool management with conventional Tool handling. Balluff can show you the tangible cost advantages of using Industrial RFID based Tool ID.

The cost and ROI calculation presumes a medium-size production facility with twelve machining centers and 1200 tools. See how the up-front purchase and implementation of Tool ID will pay for itself in a very short time.



Do your own ROI calculation, go to:
www.balluff-usa.com
go to RFID/Tool ID to see your individual savings potential.



Machining center
Greater machine utilization through reliable, unique association in tool magazines
- Tool data is transferred automatically to the machine's memory
- No incorrect manual entries, no miss-entered data

Tool life monitoring
Greater efficiency
- Exact inventorying reduces stock level requirements and offers great savings potential
- Exact tracking of tools in the work process ensures efficient tool usage
- Tools are sharpened or replaced "just-in-time"

	Handling with Industrial RFID	Conventional handling
Tool breakage	Quantity: 20 pcs./year Downtime: 10 minutes Downtime costs: Machine hourly cost Operator hourly cost = $5/min (assumption) = 200 min × $5/min **= $1,000 cost/year**	Quantity: 175 pcs./year Downtime: 10 minutes Downtime costs: Machine hourly cost Operator hourly cost = $5/min (assumption) = 1750 min × $5/min **= $8,750 cost/year**

Annual savings with Balluff Industrial RFID $7,750 (not including production downtime savings)

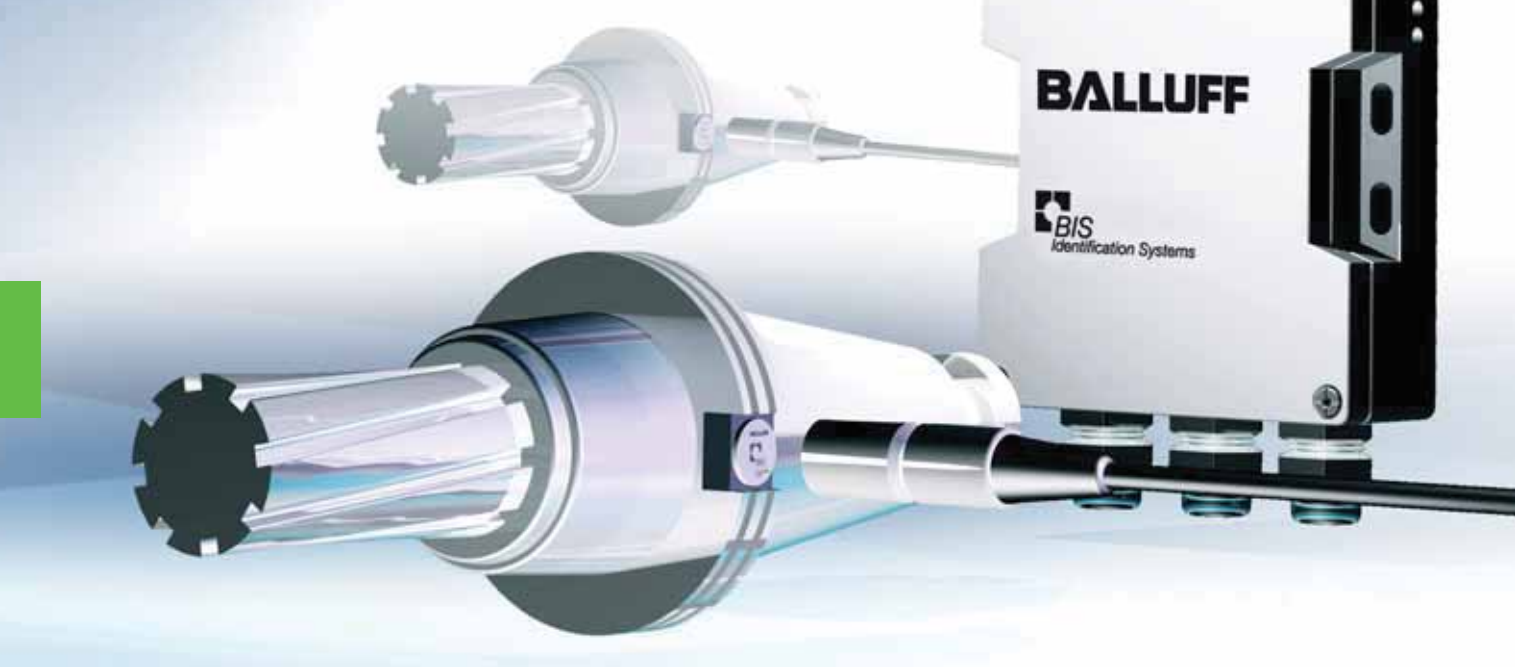
Tool utilization	Avg. tool price: $200 Tool utilization: < 92 % New tool: < 340 pcs./year Lost utilization: 8 % = (340 pcs./year × $200) × 8 % **= $5,440 cost/year**	Avg. tool price: $200 Tool utilization: < 65 % New tool: < 500 pcs./year Lost utilization: 35 % = (500 pcs./year × $200) × 35 % **= $35,000 cost/year**

Annual savings with Balluff Industrial RFID $29,560

Tool and data entry	Loading, data entry: 0.3 minutes Machine hourly rate: $86 ($1.43/min) Tool changing assuming 2-shift operation per machine: avg. 25 changes/day Machine operation: 250 days/year = (0.3 minutes × 25 changes × 12 machines × 250 days/60 minutes) × $86/h **= $32,250 cost/year**	Loading, data entry: 1.3 minutes Machine hourly rate: $86 ($1.43/min) Tool changing assuming 2-shift operation per machine: avg. 25 changes/day Machine operation: 250 days/year = (1.3 minutes × 25 changes × 12 machines × 250 days/ 60 minutes) × $86/h **= $139,750 cost/year**

Annual savings with Balluff Industrial RFID $107,500

Total annual savings with Balluff Industrial RFID $144,810



Tool Identification with Industrial RFID

The system

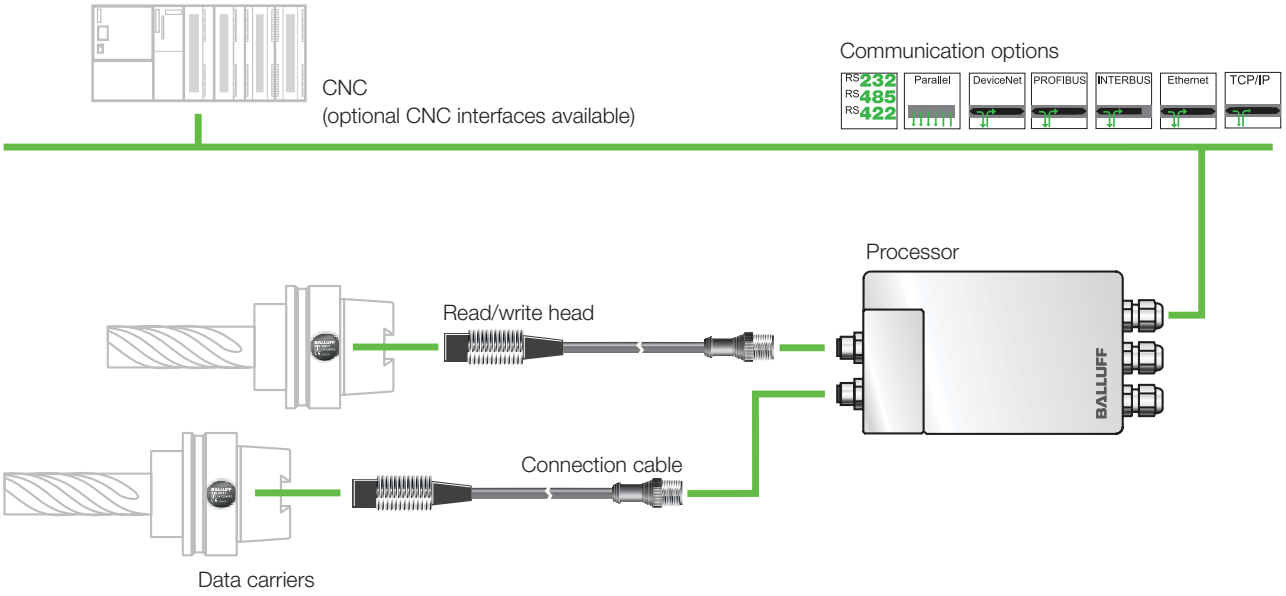
A non-contact tool identification system in today's machine tools can make an indispensable contribution to a defect-free and efficient production process.

Balluff's Industrial RFID's exceptionally reliable, rugged, and dependable inductive technology is ideal for use in the harsh industrial environment of machine tool.

Data exchange between the data carrier and read/write head is non-contact and wear-free. Data and necessary power for the data carrier are inductively coupled by the read/write head.

- The data carrier requires no battery for power
- Data transmission reliability is guaranteed by integral checking software

A wide variety of RFID data carriers (chips), read/write heads, processors and accessories are available. Balluff can help you choose the correct RFID parts based on the system capabilities required for the machine and tool holders being used. Balluff can also help provide assistance with installation of the data carriers and integration of the RFID system into you machines. Many presetter products already support or can have Balluff RFID installed, just check with your presetter supplier.



Product Identification with Industrial RFID
Traceability in manufacturing

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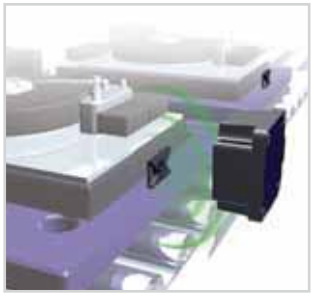
In addition to Tool ID, Balluff offers a wide variety of RFID systems for other industrial tracking and traceability applications. In fact, Balluff offers a wide variety of RFID products to help you error proof virtually any manufacturing process. Contact Balluff to see how we can help you with your RFID applications.

Specialty Data Carriers
90° angled data carriers for large assembly systems with several shunt points offer connection flexibility while saving changes to the line. Using a data carrier whose data is available from two 90° offset sides means the work piece data carriers do not have to be rotated for reading and writing.

Part Mounted Data Carriers
Balluff's Databolt™ data carriers are ideally suited for harsh environments. Their rugged design ensures that ID tag-enabled parts are reliably tracked in production processes where coolants or large quantities of chips are present. These tags are ideally suited for washing equipment and vacuum driers.



Mount-on-Metal
Consistent and reliable performance in any environment – regardless of the material the tag is mounted to. The small form factor of our data carriers can handle large quantities of data and provide long read/write ranges even in the toughest environments, even when mounted on metal.

Pallet Identification
The large variety of data carriers and read/write options in the Balluff Industrial RFID product offering makes pallet identification 100% reliable in virtually any application. Balluff Industrial RFID systems provide automation tracking, help prevent process interruptions, and provide process-oriented quality assurance and error proofing.

www.balluff-usa.com

Connect with us online!

Scan the QR Code to visit our social media page.

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