

Gi-360T automated inspection equipment (AIE) at DRZ.

FLAWLESS AMMUNITION

Ammo manufacturer-supplier relationship spurs innovation in laser gauging and vision inspection technology for ammunition.

Ammunition quality is crucial for achieving proper functionality, whether it's on the battlefield, during intense shooting competitions or hunting, ammo manufacturers reputation is constantly on the line. As the late Will Rogers stated, "You never get a second chance to make a good first impression." so true for ammo manufacturers. Supplying defect free product is critical to ensuring a great name within the ammunition industry.

DRZ Ammunition Manufacturing Company, Las Vegas, NV, is first and foremost an OE manufacturer. They understand the importance of reputation and made

investments into quality from the start. They sell bulk wholesale to stores and distributors across the U.S. In addition to their branded ammunition, they also contract load for other manufacturers.

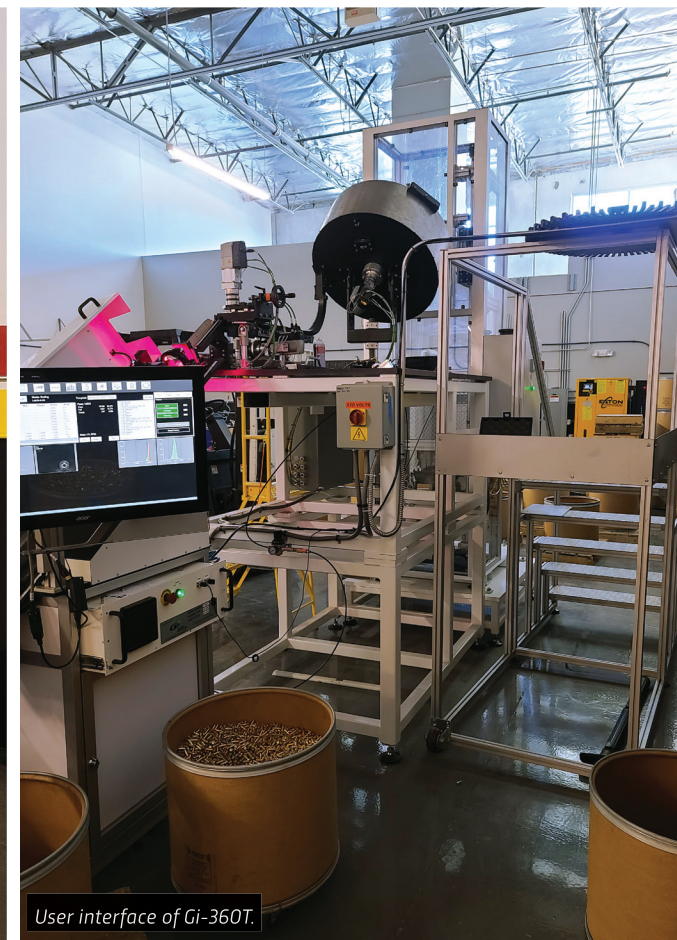
To secure their valued reputation, DRZ turned to the world's leading ammunition gauging and sorting machine manufacturer, General Inspection, LLC (Gi) from Davisburg, MI, to supply a 3D laser gauging machine called Gi-360T. This system uses multiple, precise narrow laser beams, plus a laser velocity gauging station to accurately measure small and medium caliber ammunition to print specifications. In spec. ammunition cases, ammo

cartridges and/or ammo projectiles are separated from defective or out of tolerance pieces at rates up to 300 rounds per minute. It uses 3D data from multiple laser beams to measure profile features such as, lengths, length to shoulder, full-form, diameters, angles, radii, straightness, concentricity as well as detecting damage that will not allow cartridges to chamber.

As President/Owner of DRZ, Zev Feigenbaum recognized the importance of state-of-the-art 3D laser gauging and vision inspection to ensure ultra-precise ammunition to eliminate defects. So, before the company opened its plant, one of its key investments in guaranteeing

the quality of its critical ammunition was to select an advanced, sophisticated, high-speed gauging system. "While we primarily manufacture ammunition under our brand, we have also started loading for other manufacturers. Having the Gi-360T gives us a step up in quality control and has been a selling point when acquiring new contracts" stated Feigenbaum. "Once our President saw the Gi-360T, 3D laser gauging system, he knew it would be a critical part of our quality control process to achieve zero defects," says, Ricky Wittig, Plant Manager at DRZ.

"Measuring 360 degrees around each part is critical. Defects can be



User interface of Gi-360T.

located anywhere along the circumference, therefore, inspection needs to take place over 360 degrees." explains Kyle Harmer, a Product Manager at General Inspection, a developer of high-speed measuring and sorting ammo inspection systems. "You have to measure all the way around or critical defects go undetected. The Gi-360T measures 360 degrees around each part to detect dimensional anomalies." With measurement repeatability for diameter (.005mm) and length (.01mm), total error, the Gi-360T is the most accurate and reliable ammunition inspection system available.

With DRZ's dedication to zero defect manufacturing, the company sought to further enhance the ammo inspection system. As an option on its high-speed ammo inspection system, DRZ s added primer vision for the detection of cocked, inverted, dented and missing primers. Also, the primer vision detects the presence and quality of the head stamp, a feature necessary for customers to recognize the brand. Mr. Feigenbaum

stated, "Our current Gi-360T is set up to inspect dimensions and is also equipped with the primer vision feature. General defects that we will find include dimensional irregularities on the brass casings, rounds that do not meet the OAL or crimp specifications dictated by our load data, and cocked or inverted primers."

Feigenbaum continued to state, "The Gi-360T allows us to dimensionally inspect all aspects of our completed rounds. Without going into detail of the different measurements taken between pistol and rifle ammunition, the typical measurements that we target include...

- Rim diameter and thickness
- Extractor groove diameter and length
- Body diameter and length
- Base to shoulder
- Shoulder to neck,
- Shoulder angle
- Neck diameter and length
- Overall round length
- Crimp diameter

...keep in mind, the Gi-360T is measuring and detecting



Defect free DRZ ammunition.



defects at production rates, inspection rates depend on the type of round being inspected. The Gi-360T's throughput is 220-260 parts per minute on our 9mm ammunition and between 185-195 per minute with the .223/5.56mm rifle rounds."

The DRZ brand is becoming more recognizable due in part to its exhaustive pursuit of quality and its eye for detail. They are now running two 10-hour production shifts daily at the Las Vegas plant with the Gi system, with plans to expand.

General Inspection, LLC (Gi) is the world's leading manufacturer of ammunition inspection systems. Their machines are designed to measure all small and medium caliber ammunition and ammunition components, including: Cases, cartridges, cups, primers and projectiles.

Mike Nygaard, President/CEO of Gi stated, "We started manufacturing inspection systems in 1991 mostly for the automotive industry. Our first ammunition inspection system was designed and delivered in 1998, by 2006 Gi became

a household name within the ammo industry." To stay on top, Gi has relied on R&D and more importantly, excellent customer service.

Feigenbaum stated, "I think anyone in the manufacturing industry would say that there is no such thing as a perfect machine. With that being said, the Gi-360T comes close. The Unit requires very little maintenance, has minimal wear items, and is an overall simple platform to operate. It provides consistent repeatable results and is highly dependable. The staff at Gi are dependable and always take the extra step to make sure that our machine runs the way that it should. Tech support is just a call away and the ability to have them remotely log into the machine has been a bonus the few times that it was needed to trouble shoot and fine tune the machine."

DRZ AMMO

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