

Virtek Vision

Virtek's Iris Spatial Positioning System

Simplified Fabrication for Welded Structures

Using vision-based laser projection you can locate objects in 3D space and rapidly lock on to CAD-specified assembly positions, eliminating the need for expensive tooling.

This cutting-edge system simplifies the fabrication process of complex welded assemblies, making it easier than ever before to visualise your next project before you begin to assemble. With Iris 3D, manual measurement, marking and templates become a thing of the past. The system enables instant alignment of parts or tools, virtually eliminating setup time.

Increase Production

The convenience is unparalleled as there is no requirement to create files in advance. Effortlessly select your workpiece and project the laser template directly onto the weld table within seconds!

Easy to use IRIS™ Software

Unleash the power of visualisation by seeing your final project before you commence assembly. Experience the convenience of effortlessly assembling complex 3D parts with the same ease as simple parts. The simplified software interface reduces training requirements and minimises operator errors, making operation and administration more straightforward. It eliminates differences between 'as-built' and 'as designed' because assemblers are always working with the most current CAD file.

Superior Quality & High Visibility

Remove operator error and replace manual

measurements and templates with automated laser-guided assembly. The Auto Focus feature, coupled with the brightest, safest laser line ensure quality and superior visibility even in bright work environments.

The system also includes a projected crosshair feature that automatically indicates drill locations, punch locations and assembly positions, working seamlessly on both flat and curved surfaces. Virtek's Iris 3D incorporates field-replaceable components, enabling flexible on-site repairs and reducing the overall cost of ownership. With these benefits, Virtek's Iris 3D optimises precision, efficiency and cost-effectiveness in welded assembly processes.

CAD Visualization allows you to work directly from your digital designs. The user-friendly interface is designed to be simple and intuitive, enabling anyone on the shop floor to utilise the system. This solution is specifically designed for the following industries: welded assembly, agriculture, heavy fabrication, rolling stock and mining equipment.

Applications include 3D-welded stud and bracket placement, component and final assembly, fabrication, table layout and welded assembly.

Laser being projected on to part assembly

How to Reduce Errors in the Manufacturing Process

Find out how a valued customer was able to reduce errors in manufacturing and increasing efficiency to meet increased demand

Komatsu was seeking to reduce errors in manufacturing, while at the same time increasing its throughput and efficiency to enable it to meet increased demand. The company was using aluminium templates to guide workers in welding brackets, stand-offs and studs on large mining truck frames.

These templates were costly to manufacture, design and redesign. Additionally, they were cumbersome, presenting health and safety risks and taking up a lot of space to store. By implementing Virtek's Iris Spatial Positioning System (SPS), Komatsu eliminated templates and significantly accelerated their assembly process, eliminating human errors and upholding quality because items are built exactly as designed.

The Challenge

To remain competitive, Komatsu had to offer its customers more customised, modular, integrated and autonomous solutions. The complexity involved in delivering these solutions has caused an increase of over 300% per frame in the number of assembly components on electric mining trucks.

- Quality: issues led to rework sometimes costing up to 10x more to complete
- Engineering: challenges caused delays in manufacturing throughput as well as quality issues
- Manufacturing: an ever-evolving manufacturing process led to cost and safety challenges

The Solution

At Komatsu, Virtek's Iris SPS helps guide welders in the manufacturing of its large-scale mining trucks by projecting precise laser lines for accurate positioning of assembly components on the frame. Iris SPS uses actual measurements from the real part to align the CAD 3D model to the built part, enabling the user to account for any manufacturing deviations and assembly stack up tolerances. This reduces or eliminates errors caused through the typical assembly process.

By eliminating the use of templates, manual measuring, marking and fitting steps, Komatsu was able to error-proof the assembly process. This led to a 95% reduction in defects resulting in a significant cost savings.

Engineering changes now take hours not weeks to hit production. Specifically, engineering changes for templates went from up to 8 weeks down to 2 to 16 hours.

Manufacturing is performed more safely and accurately. The Iris SPS user interface requires no prior experience. Visual cues guide operators through each action and project text indicators that identify part numbers for accuracy. The operator rarely needs to leave their workstation and set up time is minimal. Manufacturing is performed more safely and accurately.

To read the full case study, please download [here](#).



Laser projection showing part placement with Virtek Iris SPS

Flexible laser solutions for improved productivity

Engineering
Simplicity.



VIRTEK IRIS

Flexible. Reliable. Mobile.

Transform manual measurements, marking and the use of physical templates and automate with ease using laser solutions. Assembly is the final and most critical step, ensure required accuracy and consistent part-to-part quality. Find out how you can create efficiencies, reduce time to market, and dramatically cut costs in your existing manufacturing process.



VISUALIZATION



PICK N PROJECT (PNP)



We tailor our solutions to your production needs.
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