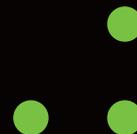


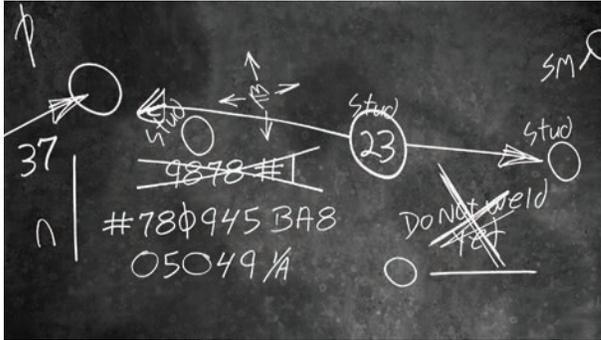
SPATIAL POSITIONING SYSTEM

Breakthrough Technology
for Assembly Processes



Accelerate and Error Proof the Assembly Process by Eliminating Manual Measuring, Marking and Fitting

MEASURED BY HAND



1 Part position is measured and marked by hand, using workpiece edges and perimeters – an inaccurate and time-consuming process.

2 Placement is usually accurate when measured in straight lines on flat surfaces. Contours and curve surfaces introduce errors and invite misalignment.

3 Fitting requires skilled workers who are more costly and difficult to find.

4 When assembly is in progress, determining the accuracy of part alignment is difficult and misaligned welded parts are always costly to fix.

POSITIONED BY IRIS



Part position is taken directly from CAD data and projected onto the workpiece for exact as-designed placement.

Iris has been shown to accelerate assembly by as much as 60 percent, depending on the size and complexity of the part.

Iris is designed using state-of-the-art 3D technology and laser-accurate software that pinpoints locations on complex surface shapes.

Iris' user interface requires no prior experience. Visual cues guide operators through each action and projected text indicators identify part numbers for accuracy.

Iris examines parts for positional accuracy and provides instant feedback to eliminate work-in-process errors.



Eliminate Production Expense and Delays Caused by Using Templates

POSITIONED USING TEMPLATES



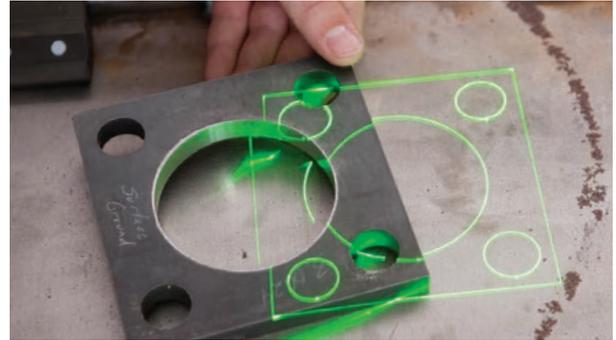
1 Design changes require new templates that are costly to manufacture and often delay the assembly process.

2 Templates are often difficult to align properly on work pieces.

3 Templates are large and heavy, sometimes causing physical strain and injury.

4 Storing templates consumes valuable floor space.

POSITIONED BY IRIS



With Iris, engineering changes are passed to the shop floor in minutes because the system simply references an updated CAD file to accurately guide assemblers.

The Iris Spatial Positioning System determines the work piece's position in 3D space and projects a laser outline indicating exact placement locations for parts – even on the most complex pieces.

Iris eliminates the use of templates, thereby upholding employee safety.

Because Iris is so compact and portable, it's easily moved between assembly areas and requires no storage.



Assemble parts up to 60% faster.

Detect errors early in the process; prevent costly rework.

Eliminate use of templates.



Laser Projector



Spatial Locator

Eliminate manual inspection; reduce labor costs.

Ensure assemblies match CAD designs precisely.

Weldment



INTRODUCING VIRTEK'S IRIS SPATIAL POSITIONING SYSTEM

The Iris™ Spatial Positioning System combines breakthrough technology with laser projection to create a new precision assembly technique called *virtual tooling*.

Iris SPS locates objects in 3D space and quickly locks onto CAD-specified assembly positions without the need for costly tooling or optical targets. The Iris system is compact and easy-to-use for improved productivity, quality and safety on the shop floor.



Synchronize Manufacturing and Design

The Iris system eliminates differences between "as built" and "as designed" because assemblers are always working with the most current CAD file. There are no delays when design changes are made by engineering so, as a result, engineering and manufacturing are always in sync.

IMPROVED ACCURACY, QUALITY AND WORKFLOW

Iris SPS is game-changing technology for manufacturers of highly engineered, low volume, highly tooled products.

Accurate

Iris Spatial Positioning System quickly locates the exact placement area for assembly. Any movement of the Iris system or the work piece will automatically re-position the projection.

Intuitive

The Iris system is easy to learn and operate. It is designed for use in the flow of normal operations and validated on the shop floor. Within the application, visual cues and tool tips are presented to guide operators through each action with ease.

Adaptable

The Iris Spatial Positioning System can accommodate even the most complex assemblies by projecting on difficult-to-reach locations. It accelerates the assembly process by eliminating the wait for markup and/or templates at the onset of a project or when design changes are made.

Iris Spatial Positioning System

- precisely locates work piece in 3D space
- quickly locks onto CAD datum references
- accurately projects 3D positions – for precise assembly

In addition, the entire system:

- is compact, portable and easy to use
- has no special safety or tooling requirements



HOW IT WORKS

The Iris Spatial Positioning System employs photogrammetric triangulation. It involves three things working together: the laser projector, the spatial locator, and the work piece itself. With an accurate understanding of the work piece's location in 3D space, the system can project assembly locations on any of its surfaces.

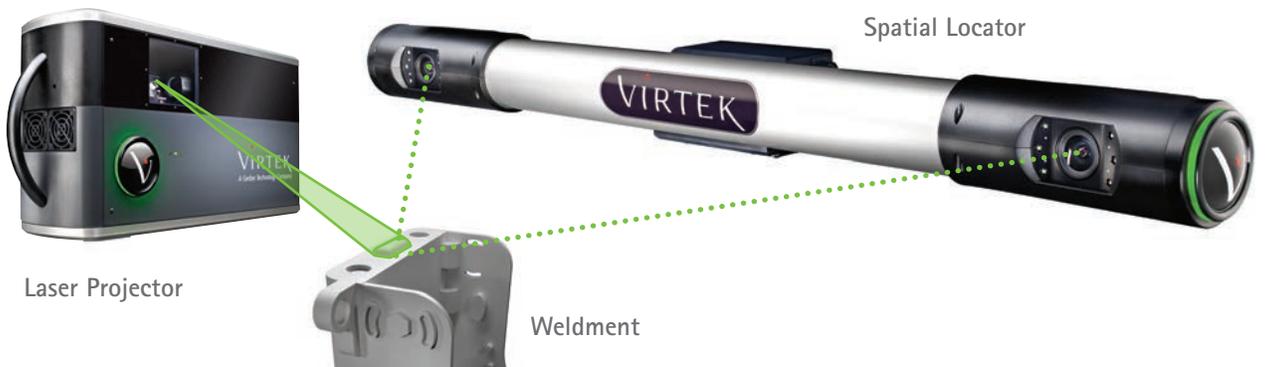
The *virtual tooling* process begins with the engineer's CAD model.

Alignment datums are chosen based on the design's callouts to ensure accuracy and repeatability. The assembler uses a small probe to touch the first feature and activate the position capture. Advanced software identifies these datums for precise location of work piece parts, projecting a highly accurate 3D laser reference to help guide users. Once Iris has "locked onto" its datums, any movement of the Iris system or the work piece will immediately trigger a re-alignment to correct as-designed CAD specifications.

Laser patterns are sequenced to ensure the correct assembly order is upheld.

Laser projection guarantees the right part is in the right location and with the correct orientation.

Iris Spatial Positioning System



ADVANCED SOFTWARE, USER-FRIENDLY INTERFACE

The Iris system is sophisticated and remarkably intuitive, built for hassle-free operation by engineers, managers and assemblers.

The User Interface

- Minimalist operator interface speeds training and streamlines work, reducing operator error
- One click gives immediate access to all needed information
- Visual cues and tool tips clearly guide operator through necessary actions
- Projected text guides the operator through workflow
- With a fully-integrated remote and probe interface, there's never a need to return to the workstation



Remote Control



SPECIFICATIONS

SPATIAL LOCATOR

Length:	1210 mm (48 in.)
Diameter:	100 mm (4 in.)
Weight:	6.5 kg (14 lbs.)
Range:	< 6 m (20 ft.)
Resolution:	0.125 mm (0.005 in.)
Power:	115-240 VAC 50/60 Hz
Field of View:	70 degrees



LASER PROJECTOR

Length:	622 mm (24.5 in.)
Height:	330 mm (13 in.)
Depth:	175 mm (7 in.)
Range:	< 12 m (39 ft.)
Projection Angle:	60 degrees
Accuracy:	<0.38 mm @ 6 m (0.014 in. @ 20 ft.), <0.76 mm @ 12 m (0.030 in. @ 39 ft.)
Power:	115-240 VAC 50/60 Hz



IRIS SOFTWARE AND USER INTERFACE

Controller:	32 and 64 bit compatible
OS:	Windows 7
Interface:	Keyboard, remote and probe
Interaction:	Controlled, guided processes



VIRTEK VISION INTERNATIONAL, INC.
785 Bridge Street, Waterloo, Ontario N2V 2K1 Canada
T +1 519 746 7190 F +1 519 746 3383

www.virtek.ca

ISO 9001 certified since 2008



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785 Bridge Street
Waterloo, Ontario N2V 2K1
CANADA

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F +1 519 746 3383

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