



ATS Global B.V.

# ATS Inspect Welding



[www.ats-inspect.com](http://www.ats-inspect.com)

## Don't Just Collect Data-Use it to Reduce Weld Defects and Rework

Every weld and assembly operation collects data but few people use it effectively. Most record their data using paper and pencil and key that data into Excel to create a minimal set of reports that are not produced in real time. ATS Inspect replaces this ineffective system with a paperless data collection operator interface for performing inspections. All data entered is immediately made available for analysis via web based reporting. With ATS Inspect you don't just **collect data** - you **use data** to affect true process improvement and reduce costs.

### Capturing Quality Data

ATS Inspect makes light work of the quality control required by your weld/assembly processes. The suite of applications provides a number of different approaches to capturing and analyzing defect and rework data:

- ▶ Collects and analyzes weld defect data for issues such as cracks, missing, edge weld, burn through, pinholes, porosity and other common non-conformances.
- ▶ Collects and analyzes variable data such as nugget size, cut and score, ultrasonic verifications and other measurements to ensure they stay within specified limits.
- ▶ Utilizes electronic checklists for verifications and destruct audits to vastly reduce human error and increase quality control efficiency.

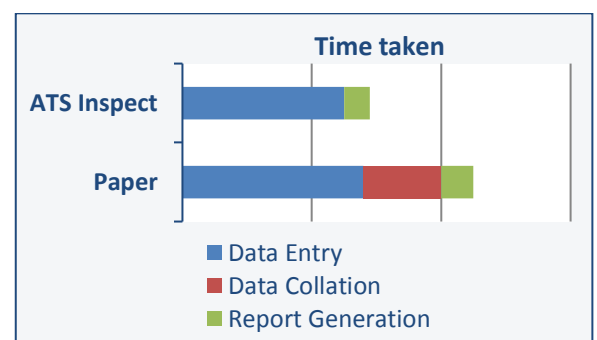
### For All Steps of Your Weld and Assembly Process

ATS Inspect can be adapted to capture quality data in TIG, MIG and Spot welding and assembly. It can also be used to perform inspections at any step in your weld process, including:

- ▶ Inspection and analysis of defects in weld, sub assembly, assembly and rework
- ▶ Analysis of Measurement data such as nugget size, cut & score, ultrasonic verifications and other metrics
- ▶ Sheet metal defect analysis
- ▶ Rework tracking and buy-off
- ▶ First Time Through and Tracking Point Pass analysis
- ▶ Defect Mapping and Concentration Diagrams
- ▶ Weld Contamination/Campaigns and Analysis.

### Paperless Manufacturing

Human error is reduced to a minimum by removing the requirement of re-entering information from a paper record into the database or Excel for analysis. With ATS Inspect information is entered directly into the system. Time and money are saved by avoiding duplicate data input.



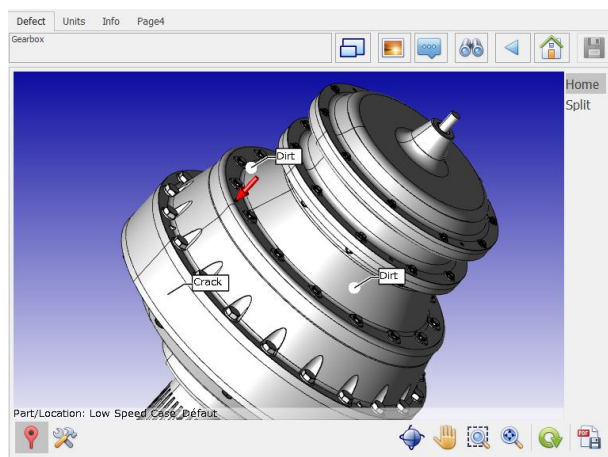
Data can be entered using a PC, tablet or handheld device. Entering data directly into the system reduces the risk of human error.

### 3D Inspection

Defects can be placed directly onto 3D CAD models. All major CAD formats are supported allowing you to import your existing models.

The name and ID of every component within the model can also be imported into the database which will greatly reduce your setup time.

When you need to add a defect you can smoothly rotate the model, using a mouse or touch-screen, zoom in to the required area and assign the defect.



By bookmarking key positions the operator can jump to preset perspectives with cut-throughs and with components removed so that they can place defects inside the product without the need for multiple views and photos to be taken.

### Layered Inspection

The operator can also place defects on multi-layer 2D views. This allows them to strip away information to see *inside* the object being inspected.

This layered approach mimics real-world inspections and speeds up data collection which reduces costs and means no defect can remain hidden for long.

### Create a “Digital Thread” for your Serialized Parts

If your parts, assemblies and sub-assemblies are serialized, you can easily capture the serial number associated with each part through keyboard entry, barcode scanner or other electronic method. ATS Inspect then creates and builds a “digital thread” for each part as it passes through the production process.

Defects and repairs are collected throughout all your inspection and repair points and combined into one record that is easily accessed. If your customer calls with a question regarding a specific part you supplied, you can retrieve and view the entire part inspection and rework history in a matter of seconds!

If your process allows for repairs such as re-weld or spot weld, you can review the entire history of which defects were found, whether they were repaired and whether the repairs were “bought off”.

### Simple Defect and Repair Entry

An easy-to-use operator interface is one of ATS Inspect’s principal strengths. When recording defect data ATS Inspect displays digital images of the part or assembly and uses simple touch screen tools. Defects can be found, flagged and automatically routed to rework in a few seconds.

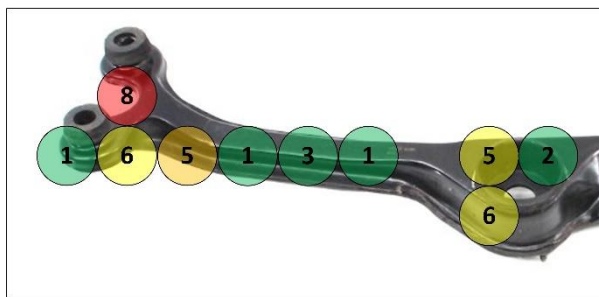
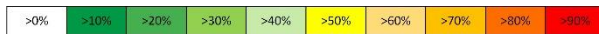
### Capture Both the Type and Exact Location of Weld Defects

In weld applications, knowing the *location* of the defect as well as the *type* of defect is critical to making the right process change to eliminate that issue.

Digital photos and CAD drawings can be imported and included in inspection screens for defect location accuracy. When an operator/inspector touches the part image on the ATS Inspect data collection screen, the software captures the exact location/weld number of the defect along with the defect type.



Having the type of defect and the exact weld/location allows you to make the right decision regarding adjustments such as amperage changes, weld tip changes, assembly fixture modifications, part handling procedures, or other modifications that will reduce the number of defects occurring. Concentration Diagrams and Defect Maps that used to take days to produce are available in real time.



When reviewing repairs at another station the operator can view the same image and easily identify the defects and then record the result of the repairs.

## Work Instructions/Visual Aids

It's often useful to have some extra information about how to carry out an inspection or repair. This is where Reference Documents come in handy.

Operator instructions, visual aids or whatever else you may need can be accessed by the operator when they need them most.

Having immediate access to job aids and work instructions improve the quality of the data entered and assist in proper defect identification.

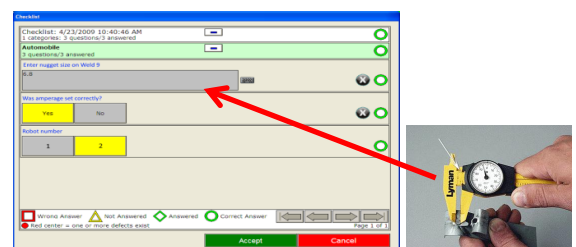
<p>1 Body in White</p> <p>Feature : Weld Quality Criteria : Holes Method : Visual</p>	<p>100%</p>	<p><b>HOLES:</b> SPOT WELDS WHICH CONTAIN HOLES WHICH EXTEND THROUGH THE WELD ARE DISCREPANT WELDS.</p> <p>H O L E S</p>
<p>2 Body in White</p> <p>Feature : Weld Quality Criteria : Cracks Method : Visual</p>		<p><b>CRACKS:</b> SPOT WELDS WITH HOLES AROUND THE CIRCUMFERENCE ARE DISCREPANT WELDS. SPOT WELDS WITH SURFACE CRACKS CONFINED WITHIN THE IMPRESSION LEFT BY THE ELECTRODES ARE NOT DISCREPANT WELDS.</p> <p>S U R F A C E C R A C K S : A C C E P T A B L E</p> <p>C R A C K S A R O U N D T H E C I R C U M F E R E N C E : U N A C C E P T A B L E</p>

Example work instructions

## Electronic Checklists

ATS Inspect utilizes electronic checklists to record issues and to make sure all required visual checks, measurements and other critical information is captured during an inspection.

Weld nugget size measurements, cut & score, ultrasonic verifications, height & width and other documentation is prompted for as an inspector moves through the checklist. This eliminates paper checklists and the difficulty of preserving, retrieving and using checklist data for later review and analysis.



Insert recorded values in checklists

## Minimal Training Requirements

Operators are guided through the data entry process using an intuitive workflow. The operator is only ever shown the information and options that are relevant to them in that location at that time.

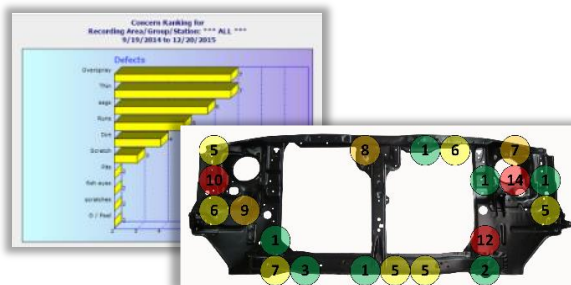
We know that entering data within the limitations of your cycle time is paramount. A complete inspection takes only a few moments and will not sacrifice production for data.



## Real Time Analysis That Puts Money in Your Pocket

ATS Inspect utilizes the reporting power of ATS Advanced Reporting Services (ARS) which allows you to fully utilize the recorded data for analyzing trends and process issues over multiple production runs, as well as providing full access to the digital thread for all information related to a single part.

Collected data and checklist information can be viewed in real-time in a wide range of charts and reports. You can even export reports to spreadsheets and PDFs.



### Display recorded data in charts and tables

The web-based reports can be viewed anywhere in the world using a web browser on a secure connection. This allows management to review production even while on the road.

Reports can be generated for each product tracked in the system, and can be based on factors such as serial number, shift, work cell, individual welder, weld type, defect type and process parameter values. Any data entered can be used.

ATS Inspect provides over eighty out of the box reports including:

- ▶ Pareto Analysis of defect types and defects by part number, weld patterns and weld numbers
- ▶ Concentration Diagrams and Defect Maps that visually indicate what welds are most problematic
- ▶ Trend Reports for all or designated defects
- ▶ Defects by shift or production hour

- ▶ Management “Dashboard” Reports
- ▶ Single Unit History Reports
- ▶ Many Others

On top of all this you will have the ability to create your own fully customized reports. Designing reports in-house means you can respond to the needs of your business as soon as they arise.

## Automated Report Distribution

Up-to-the-minute reports can also be scheduled to be sent to the relevant people at regular intervals automatically. Do you need that report on your desk first thing Monday morning? It'll be there.

## Instant Event Notification

Personnel can be instantly informed of quality issues throughout the production facility by utilizing ATS Inspect's automated messaging service that conveys information via e-mail, static display devices and overhead monitors. It can even be configured to send out information-based or exception-based messages.



Criteria for event messaging are user defined and may include:

- ▶ Quality thresholds
- ▶ Production thresholds
- ▶ Critical issues
- ▶ Quality statuses
- ▶ Production statuses

## Customize User Interfaces



### Create easy-to-use screens in Form Composer

ATS Inspect allows you to design custom screens that will be used by the operator collecting data. This flexibility also allows you to use different data collection platforms as need dictates in your facility.

## Fast Installation and Configuration - by Your Personnel

For both attribute and variable data collection the entire setup, from installation through to first use on the production line, couldn't be simpler. Out of the box ATS Inspect has everything you need to be up and running with the minimum of hassle.

ATS Inspect is designed to be configured and maintained by your quality personnel, without paying for system modifications or having to know any programming skills. This lowers the long term cost of ownership and results in a flexible system that can be deployed in any painting or coating application.

## A Complete Solution

For attribute and variable data ATS Inspect has all bases covered, from checklists through to analysis and reporting. For further information or to arrange a web demo of the software, please go to [www.ats-inspect.com](http://www.ats-inspect.com) or give us a call.

ATS is an **Independent Solution Provider**, with over 30 years' experience in the manufacturing systems arena and a wealth of experience undertaking Continuous Improvement initiatives and Manufacturing IT solution design, deployments and 24/7 support assignments.

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