

CAD Friendly Inspection Software™

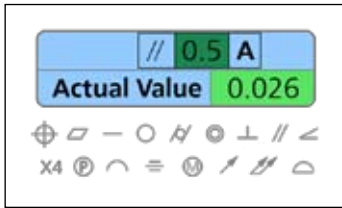
# XOV™

VERIFIER

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# Scan your Part and Have a Comprehensive CAD Comparison

in Minutes



## In-depth GD&T

- ASME Y14.5M-1994 compliant
- Material condition (MMC, LMC)
- Feature patterns
- Simultaneous requirements
- Projected tolerance zone modifiers

**GD&T**  
Ensure assemblability and operability of parts

**Virtual Edge Deviation**  
Inspect hard-to-measure sharp edges

**Curve Deviation**  
Verify parting lines and feature lines

**Comparison Points**  
Detailed point-by-point comparison to CAD

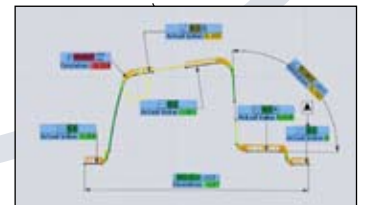
**Whole Deviation**  
Compare an entire part to a CAD model in seconds

**Silhouette Deviation & Boundary Deviation**  
Validate stampings for fit & function

**Section Inspection**  
Inspect 3D scanned parts to your drawings easily

**Thickness Plot**  
Check part thickness instantly

**Curvature Plot**  
Analyze surface continuity & curvature flow



**Section Inspection**  
Deviation vector plots and easy 2D GD&T setup

## liveScan™ - Scan and probe directly within XOV

- Collect data and process in one application
- Seamlessly switch between scanner and probe
- Works with leading scanners, arms and trackers

## Share Results in 3D

- Colleagues can open XOV files using Free Rapidform EXPLORER software
- Publish web pages with embedded 3D models

## Easy Customizable Reporting

- Create inspection reports with data tables and screen shots automatically
- Create templates with your corporate branding
- Save as PDF, PowerPoint and Excel

## Automatic Scan Assembly

XOV's Mesh Buildup Wizard guides you through a 4 step process to assemble multiple scans into one point cloud or mesh

## Rapidform XOV is the ideal solution for inspecting parts with a 3D scanner

### Complete part verification in only 4 steps:

- 1 Import data from any 3D scanner and any CAD software, or scan directly within XOV
  - 2 Auto-Align 3D scan data to the CAD model
  - 3 Create deviation color maps and measure dimensions & tolerances (GD&T)
  - 4 Auto-Report or share a 3D model to show inspection results
- Repeat for another part with two clicks

## Fast & Accurate

- Built from the ground up to handle millions of points, so it's blazing fast
- XOV's algorithms have been tested by metrology labs around the world, including Germany's PTB, America's NIST and the British NPL
- Top manufacturers like Honda, Sony and VW rely on XOV for their rigorous inspection processes
- Batch processing of hundreds of scanned parts is done automatically without user intervention

## Automated

- Every step of the inspection process is tracked in the history tree, so the next sample is processed with one click

## Multimodal Inspection

- Accepts data from 3D Scanners, Arms, Trackers, and CMMs
- Easy coordinate system alignment from multiple measurement sources

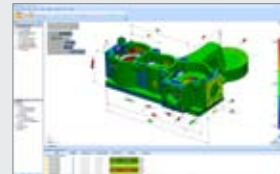
Visit [www.rapidform.com](http://www.rapidform.com) for More Details

## XOV is the Most CAD Friendly Inspection Software



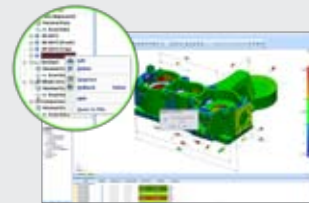
### CAD File Friendly

- Opens native files from CATIA V5, Pro/ENGINEER, Siemens NX and SolidWorks
- Dimensions, tolerances and datums are preserved, so you don't have to redefine them
- XOV also opens industry-standard formats like Parasolid, IGS, STP and STL from any CAD software



### CAD User Friendly

- Rapidform is the only scanner software that works like parametric CAD, making it easy to add or edit any feature at any time
- If you know how to run CAD, you know how to run XOV



### Parametric & History Based

- XOV manages every part of the inspection process just like the history in a parametric CAD model, so repeating an inspection is easy

## Feature Highlights

### Industry Proven Scan-to-CAD Alignment

- Top manufacturers trust Rapidform to measure thousands of parts everyday
- Choose one button automatic alignment or sophisticated datum, RPS or 3-2-1 alignments

### Use Mesh Data as Nominal

- Compare against a good part instead of a CAD model
- XOV intelligently recognizes features in meshes so they behave exactly like CAD models

### Smart Dimension & Tolerance Table

- Defining GD&T is much easier than ever through feature-aware smart dimensioning UI.
- XOV automatically sets tolerances for features based on your tolerance table.

### In-depth GD&T Support

- ASME Y14.5M-1994 compliant
- Material condition (MMC, LMC)
- Feature patterns
- Simultaneous requirements
- Projected tolerance zone modifiers
- GD&T is imported from Pro/ENGINEER, Siemens NX and CATIA when available

# PRODUCT SPECIFICATIONS

## Performance

- Works on 32 and 64 bit XP and Vista
- Parallel/Multi-threaded CPU support
- Dynamic Disk Caching Technology for effective memory management
- Intelligent point cloud rendering for fast visualization of millions of points

## CAD Friendly User Interface

- Simple, intuitive interface for designers and inspectors
- Industry's first Inspection Feature Tree
- History-based inspection processing for easy editing
- 1 and 2 click Smart Dimensioning

## CAD Interoperability

### Optional native CAD file importers for

- CATIA V5 (PMI and Geometry)
- Pro/ENGINEER (PMI and Geometry)
- Siemens NX (PMI and Geometry)
- CATIA V4 (Geometry)
- SolidWorks (Geometry)
- ACIS (Geometry)

### Standard formats

- Parasolid
- STEP (STP)
- IGES (IGS)
- VDA-FS (VDA)

## Complete Inspection Toolset

- Deviation comparison to CAD or other scans
- Whole deviation, sectional deviation, curve deviation, boundary deviation, silhouette deviation, virtual edge deviation
- Analysis of mesh shape
- Thickness plot, curvature plot, angle plot
- Smart dimensioning from CAD or mesh
- ASME Y14.5 standard GD&T
- Multiple sectioning using planes, curves or cylinders
- Analytic display, e.g. color map, whisker plot, point cloud coloring
- Extensive 3D and 2D annotation
- Tolerance tables
- Scan to Scan inspection

## Industry-proven Alignment Tools

- Intelligent Auto Alignment based on automatic feature recognition
- Best Fit Alignment/RPS Alignment/Datum Alignment/3-2-1 Alignment/Matrix Alignment

## Inspection Process Automation

- Macro-free automation
- Batch process
- Task history manager
- Replace single or multiple scan data
- Automatic update on the report

## Quick & Easy Reporting

- One button automatic report generation
- Microsoft Office style tools for easy, familiar editing
- Customizable templates to fit your corporate branding
- Save as PDF, PowerPoint and Excel

## Rapidform EXPLORER and Web Viewer

- Download for free at [www.rapidform.com](http://www.rapidform.com)
- Colleagues can open, measure and annotate any XOV file and generate their own reports using EXPLORER
- XOV and EXPLORER can both publish web pages with embedded 3D models, compressed to just 3% of their original size

## liveScan 3D Scanner Interface

- Operate various 3D scanners inside XOV
- Multimodal support, including scanning and probing in one application
- Up-to-date hardware interface info at [www.rapidform.com/scanner](http://www.rapidform.com/scanner)

## Point Cloud & Mesh Tools

- Automatic point cloud and mesh healing and cleanup
- Intelligent hole filling, noise removal, smoothing, data reduction, split & trim, thicken, offset, fix boundaries
- Watertight mesh creation
- Mesh Buildup Wizard automated processing

## Supported File Formats

### Rapidform proprietary formats

XOV(model), FCS(polygon), PTS(point), RPS(Rapidform Point-Stream file), ICF(INUS Compression Format), XDL(XOV™ 1 model), XRL(XOR™ model), MDL(Rapidform™2006 model)

### 3D scanner file formats

VDC/CDM/CAM/CDK/RGV/RVM(Minolta), AC(Steinbichler), CBK/GRK CWK(Kreon),G3D/CLOUD/SURF (GOM), HYM(Hymarc), ICV/SNX(Solutionix), IQSCAN(iQvolution), PSL/SCN/PCN(LDI), PMJ/PMJX(3D Digital Corp.), RTP/XYZ/XYZRGB(3rd Tech), PTS/PTX(Cyra), SAB/SAB2(3D Scanners), SOI(MENSI), 3DD(Riegl), STB(Scantech), SWL/BIN/SWB(Perceptron), TFM(Wicks & Wilson), XYZ/CRS/LIN/SMH/BIN(Opton), 3PI(Shape Grabber), PLY(Cyberware), BRE(Breuckmann), M3D(Steintek), FLS/FWS(Faro), PIX(Roland DG), SCN (Next Engine), XYZ, XYZN (Cognitens), OPD (Optimet)

### Standard file formats

ASC, STL, OBJ, TXT, DXF, IGS/IGES(IGES), STP/STEP(STEP), Parasolid, VDA(VDA-FS), 3DM(Rhino Open NURBS), WRL(VRML 1.0/97), 3DS(3D Studio), Inventor Ascii, Nastran, Ansys

### CAD / FEM native file formats (Optional)

CATIA V4/V5, Siemens NX, Pro/ENGINEER, SolidWorks, ACIS

## RAPIDFORM FAMILY PRODUCTS



One and only software to create parametric CAD model from 3D scan data



Fully automated scan data processing software for non-parametric/non-mechanical reverse engineering

## RAPIDFORM.dll™

Complete software development kit (SDK) for customized 3D scanning applications

## EXPLORER™

Free viewer software for instant measuring, markup, inspection analysis and collaboration

## For More Information

At [www.rapidform.com](http://www.rapidform.com), you can schedule a live demonstration of Rapidform at your facility or via a web meeting. Contact any of our worldwide offices at the numbers below to speak with a sales representative or find a local reseller.

## INUS Technology, Inc.

INUS Technology, Inc. is the global leader in the development of 3D scanning software. The company's flagship product, Rapidform, is the world's #1 3D scanning software based on the number of users in production, customer satisfaction and sales. With Rapidform XOR and Rapidform XOV high density point clouds become organized, intelligent and accurate 3D data definitions. Whether used to produce polygonal mesh files or to supply surface and solid model data to advanced 3D CAD software, Rapidform provides the control to capture, process, manipulate and interrogate the raw data from laser, white light, full-body and long range scanners. For more information, visit [www.rapidform.com](http://www.rapidform.com).

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Printed in Korea. XOV.5.0 EN 04/09