MeasureFit GD&T and Fitting Software

Fitting Software Solution with MeasureFit®

MeasureFit is designed to use data generated by Measure-X® measurement software for composite profile and GD&T analysis.
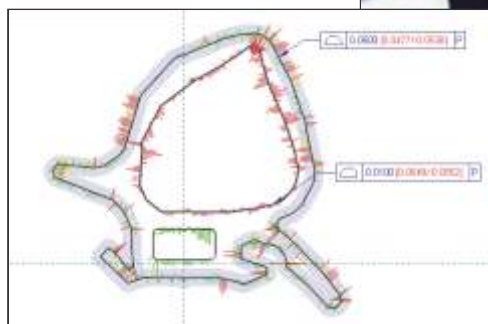
- Multi-sensor capability. MeasureFit combines data points from video, laser and touchprobes, these points will automatically be transferred to the MeasureFit project from the measurement software.

- Automatic fitting intelligence. MeasureFit analyzes all features simultaneously and automatically performs the most valid fit method. MeasureFit can use datums and geometric tolerances that are either brought in from measurement software or the user can create their own in the MeasureFit project. MeasureFit can also fit measurements automatically with a best fit for parts that do not utilize datums. GD&T results and color coded graphic results are displayed immediately, statistical summaries can be generated in SmartReport® from MeasureFit's analysis. Each fit method provides Z rotation and XY translation values to assist with tooling modifications. Trouble spots, trends, and potential assembly problems become crystal clear.

- Import/export flexibility. MeasureFit can be used offline or through Measure-X to import or export DXF files, which are then turned into MeasureFit project files containing datums, tolerances, and material conditions, matching the measurement to the print. MeasureFit can also be used to create DXF files from measurements to reverse engineer automatically.

Interactive Interface and Tools

MeasureFit Plus Software analyzes measurement relationships to get the big picture.

MeasureFit

Features
- Easy-to-use point and click interface
- DXF and MeasureFit® project import/export
- Create and use plug, ring, and compound SoftGages®
- Import DXF file with scaling factor
- Macro creation, storage, playback
- Right angle alignment
- Multiple fitting algorithms
- Standard GD&T graphics
- Easy-to-create dimensioning
- Enhanced language capabilities
- Extensive on-line and context-sensitive Help
- Analyze multiple Datum Reference Frames in a single project
- Instantaneous global inch/metric toggle
- Editable datum letter identity
- Import in XY, YZ, and XZ planes

System Requirements
- Compatible with current versions of QVI® Measure-X® and Scan-X® metrology software

Minimum Computer Requirements
- Microsoft® Windows™ XP PRO, 32-bit or Windows™ 7, 32-bit
- Intel Processor based PC-CPU, ICORE 5 Quad CPU
- 4GB of RAM, 160 GB hard drive, 8 MB cache
- Serial ATA DVD/RW
- I/O ports: 1 parallel printer port, RS-232 port, 4 USB ports, onboard network
- VGA & DVI-d graphics card
- QVI video capture board

Graphical Display Features
- Whisker plots, where —
    Size of exaggerated whisker shows deviation between measured point and nominal
    Color of whisker shows where measured points fit in relation to tolerance band; seven user-selectable colors
    Direction of whisker indicates whether there is excess or lack of material
- Tolerance envelopes

Automatic Fitting Algorithms
- Datum Reference Frame Evaluation fit method performs jiggle fit within constraints defined by Datums and RFS/LMC/MMC modifiers, applied to datum features and measured features
- Minimization of Sum of the Squares of Deviations (Least Squares/Best Fit)
- Minimization of Maximum Errors
- Minimization of the Sum of the Absolute Values of Deviations

Standards Compliance
- Datum alignment and geometric tolerance evaluation in compliance with ASME Y14.5 – 1994 and ISO 1101 – 1983
- Calculation automatically based on material identity of a feature, including Maximum Inscribed Circle (MIC) for an inside diameter, and Minimum Circumscribed Circle (MCC) for an outside diameter

Macros
- Automatic launch from Measure-X
- Macro function automatically records user operations for future automatic playback and part inspection
- Supplied macro examples, including —
    Group features and assign profile tolerance
    Use multiple coordinate systems
    Create multiple groups/assign tolerances
    Perform right angle alignment
    Create MeasureFit project from DXF file
    Compare data stream to MeasureFit project
    Output data with picture
    Play, step, edit macros

Available Feature Information
- Features List – information about individual features in the model window
- Data Points – examine every data point in a feature
- Nominals – display nominal dimensions and XYZ location of any feature
- Results – display geometry result values

Feature Constructions
- All standard geometries
- Middle point
- Projected point
- Symmetry line (width)
- Tangent line
- Horizontal/vertical tangent line
- Tangent circle (gage ball)
- Composite circles

Manufactured by:

QUALITY VISION INTERNATIONAL INC.

Rochester, New York, USA

RAM Optical Instrumentation

RAM