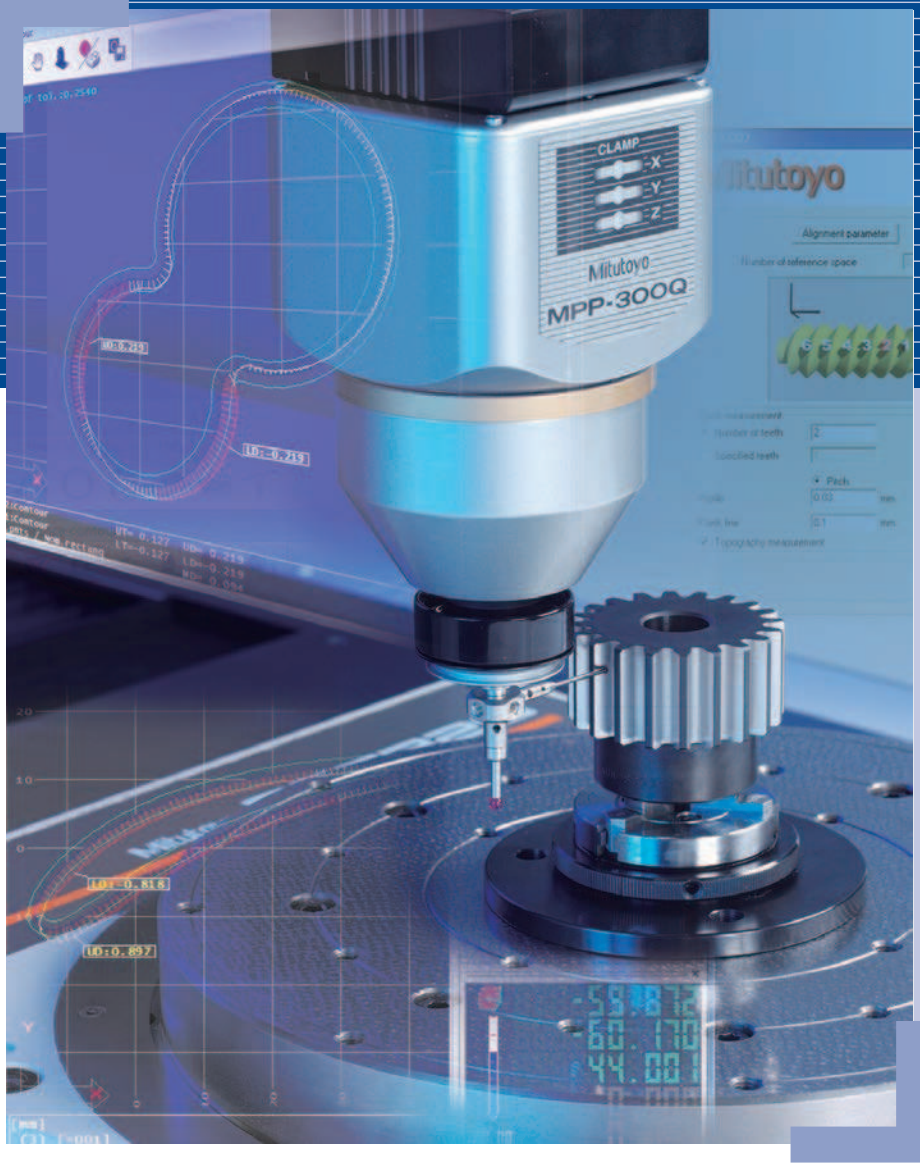
MCOSMOS
SCANPAK

Bulletin No. 2075



Scanning module for evaluation of workpiece contours, and 3D digitizing of surfaces

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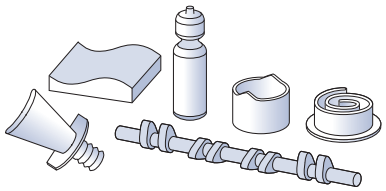
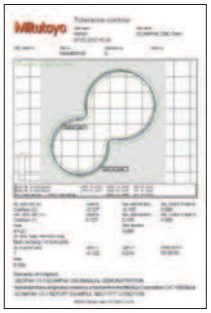
SCANPAK CNC or Manual

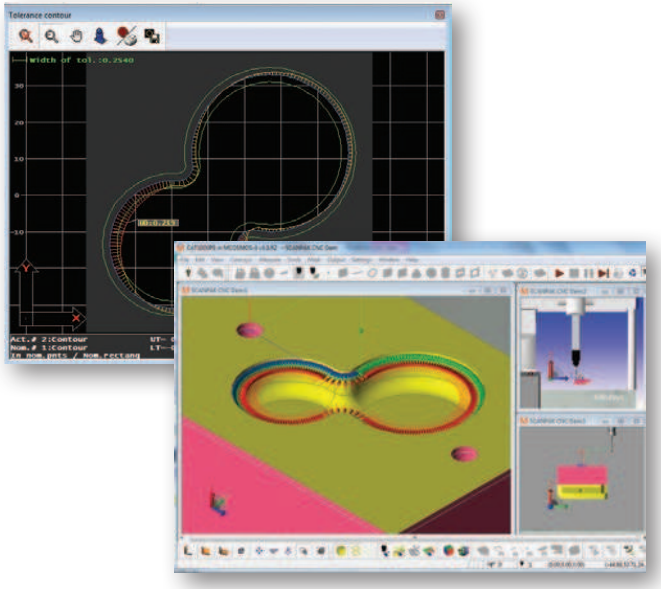
Where analysis of forms and shapes commonly known as profile-of-a-curve, then the addition of the SCANPAK enables GEOPAK scanning capability with touch probe (peck method) or scan probe CNC controlled continuous contact or hard probe for Manual CMMs.



Samples of parts that can be evaluated by SCANPAK

SCANPAK provides high performance scanning of work-pieces and evaluation of profile callouts. Accurate analysis can be made quickly, efficiently and graphical comparison charts can be generated with or without CAD.





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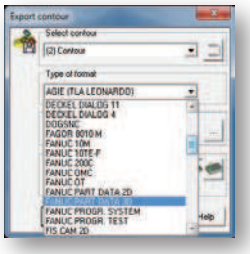
Calculate elements automatically

SCANPAK is a dedicated module that is added to GEOPAK. When it is active it gives your machine the ability to measure, edit and analyze contours as elements. These elements can be combined with the existing prismatic elements in GEOPAK. Measured Contours can be used to construct intersections or fit elements for soft-gaging or elements that construct the profile.

SCANPAK can automatically construct best-fit geometry (lines/circles) from a measured contour. This information can be used as reference for the basic dimensions given for the Profile call-out or even assist in Reverse Engineering for tool-paths.

SCANPAK can import or export contours in IGES, DXF or VDAFS CAD formats.

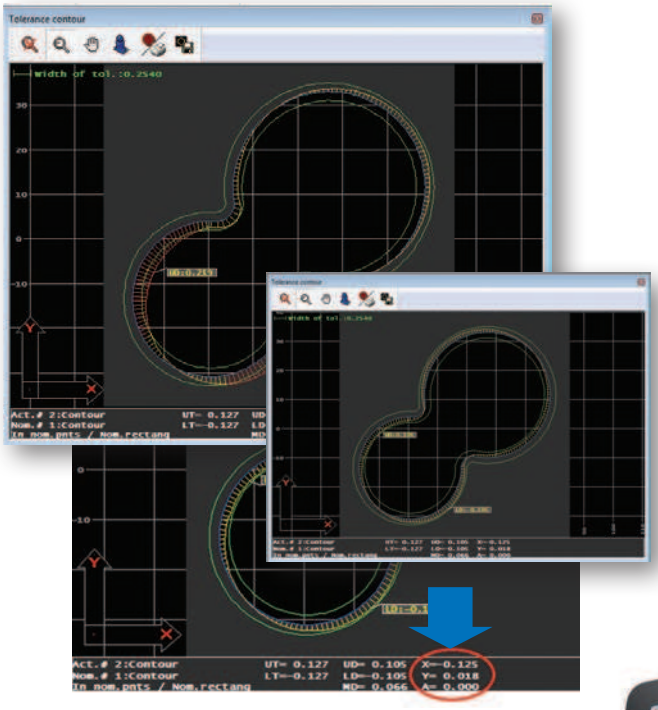
SCANPAK supports machine tool paths from Allan Bradley Controls, Bridgeport, FANUC 2D or 3D, Heidenhain, HURCO, MAZATROL, Mitsubishi and many more. This is especially handy for legacy jobs which may have limited access to data.



SCANPAK (Contour Measurement)

Best-Fit Graphic Reports

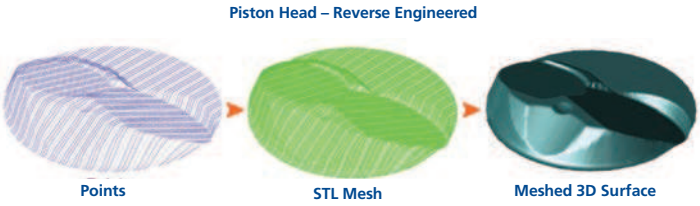
SCANPAK and GEOPAK are combined so alignments can be established. Contours can be shifted or rotated to help position tool offsets, cutter compensation etc. The example on the left shows the actual position of the contour relative to the alignment. The picture on the right shows the corrected or best-fit shift or rotationed results.



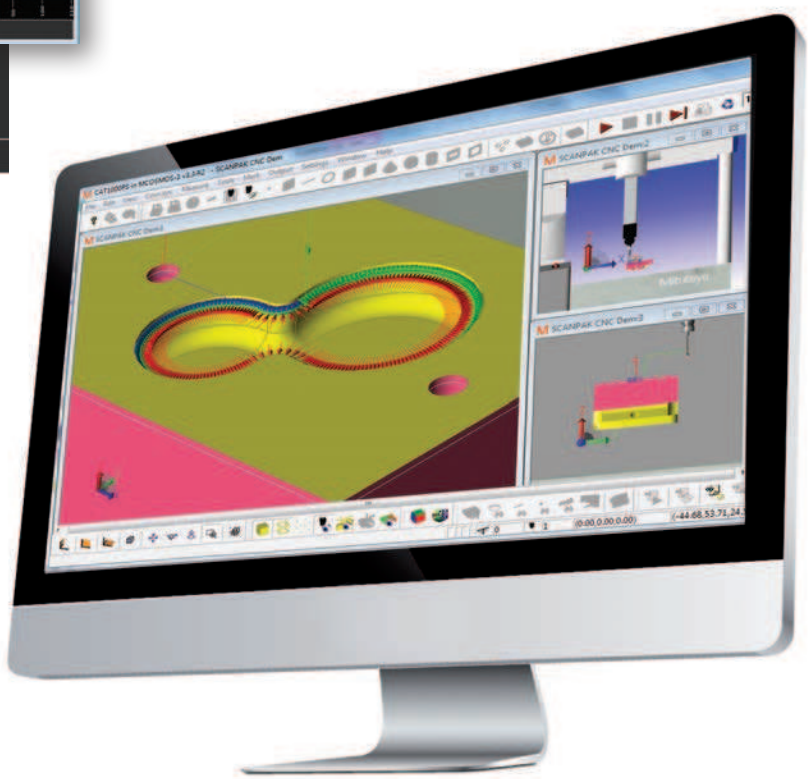
Surface Developer (Optional Program)

Requires SCANPAK CNC (not available for manual CMM)

SCANPAK and GEOPAK combined can digitize work-pieces for Reverse Engineering. GEOPAK standalone will export prismatic type geometry but adding SCANPAK allows contours to be patched together to digitize free-form or complex surfaces. For our CNC machines the Patch Scan Generator can write simple sub-routines in GEOPAK to stitch the contours together.



3D surface generation with Patch Scanning Generator. Easy to create, high-accuracy surface design. Common B-Rep or STL file output ideal for Reverse Engineering.



GEARPAK (Optional Program)

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Cylindrical (spur/helical)

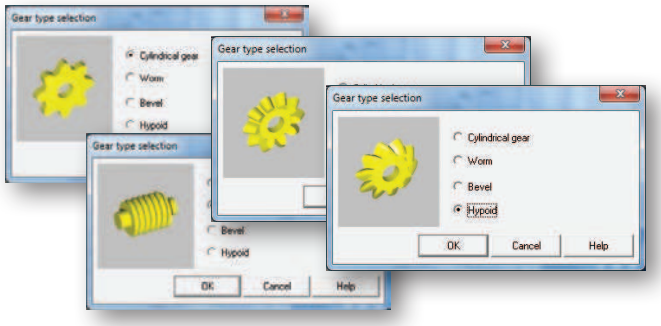
Requires SCANPAK CNC (not available for manual CMM)

Cylindrical Gear Spur

Cylindrical Gear Helical

Spur and helical gears can be measured with a Star or PH10 touch probe or scanning probe *(for helical gears, scanning probes require the MRT320 rotary table)*. Cylindrical gears can be measured as a complete gear or segmented. Cylindrical gears with modifications can also be specified.

Tolerance modes include ISO, DIN, AGMA, JIS & Gear types are separated by type. Cylindrical (spur/helical), Worm (cylindrical only), Bevel* and Hypoid*. **Only for Gleason type*

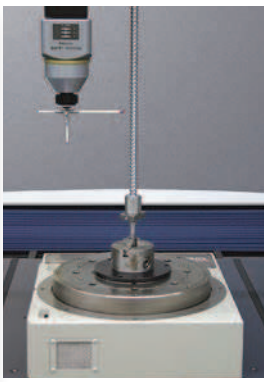


Worm (cylindrical)

Requires SCANPAK CNC (not available for manual CMM)

Supported worm types include ZI, ZK, ZA and ZN. Cylindrical worm gears can be measured with a touch trigger or scanning probe *(SP25 & MPP-300 scanning probes require the MRT320 rotary table)*.

Worm Cylindrical Gear



MRT-320 Specifications:

- Table diameter: 12.60"(320mm)
- Resolution: 1/10000 degree
- Maximum work-piece load: 220lbs(100kg)

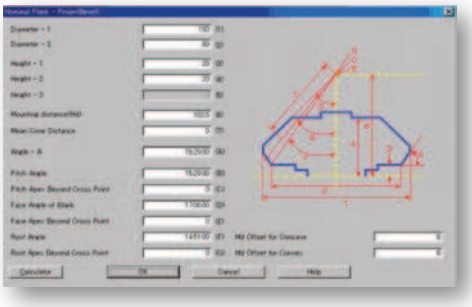
Bevel/Hypoid

Requires SCANPAK CNC (not available for manual CMM)

Straight-Bevel

Spiral-Bevel

Hypoid



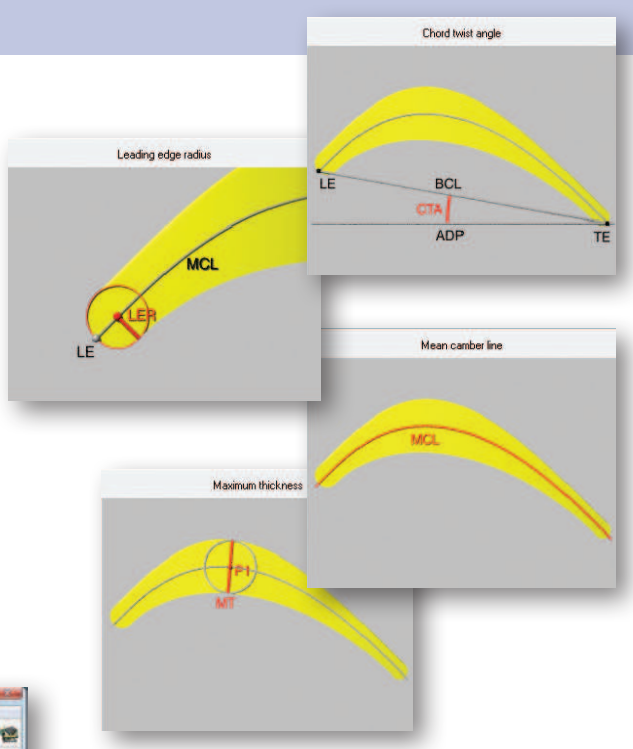
Measures hypoid gears generated by the Gleason Works Company (Ring Gear Format Helixform / Pinion) and straight or spiral bevel gears (Ring Gear / Pinion).

MAFIS (Optional Program)

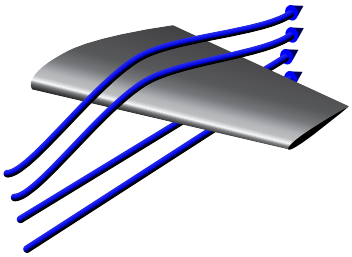
MAFIS
(Mitutoyo Airfoil Inspection Software)

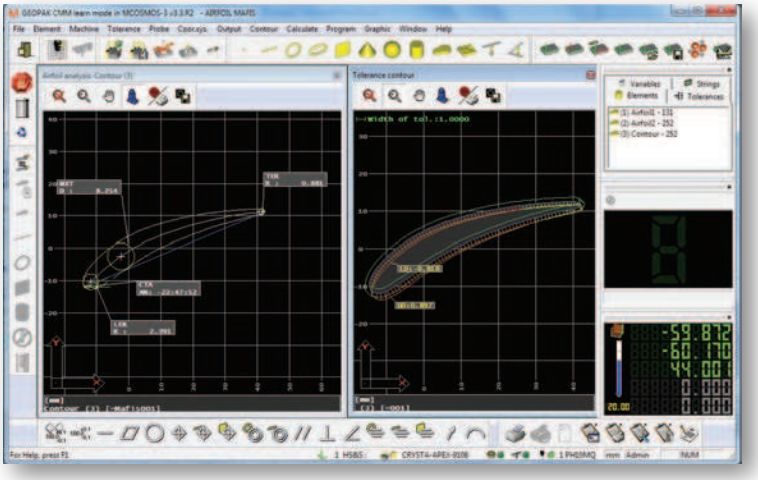
Requires SCANPAK CNC (not available for manual CMM)

With SCANPAK-CNC, MAFIS Mitutoyo Airfoil Inspection Software analyzes the measured contour and outputs the evaluation results of the desired parameters.



Unlike other Airfoil Analysis modules which operate outside of the CMM software as a separate package, MAFIS works by combining GEOPAK and SCANPAK to generate Airfoil measurements.





MAFIS calculates the Camber Line, Leading/Trialing edge, Twist and much more. Blade Analysis is easy for beginner operation and does not require an expert to implement.

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MAFIS allows airfoil-type evaluation from the data of a cross-section contour measured by SCANPAK.

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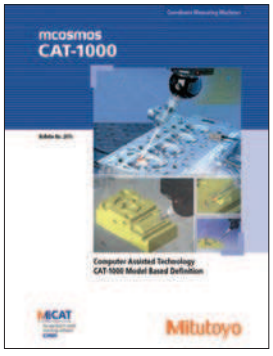

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- Small Tool Instruments and Data Management

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3M 0612-01 • Printed in USA, August 2012

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