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Geomet Version Comparison Chart – version 7.00.025

Geomet operates in four different levels designed to match your inspection needs. These levels are known as:

- **Geomet Junior**
- **Geomet 101**
- **Geomet 301**
- **Geomet 501**

Geomet Junior

Geomet Junior is the entry-level full 3D-inspection system of the Geomet series, yet it is packed with most of the functions needed for basic inspection. It favors one touch access to all basic geometric elements in addition to a highly visible set of icons on the screen for intuitive measuring without extensive training. Geomet Junior includes a powerful set of Part Coordinate System (PCS) generation tools that Geomet is famous for. Geomet Junior can be upgraded to Geomet Junior Plus which includes many advanced features such as expanded stylus, PCS support and program cycling. Geomet Junior is included with the purchase of all Helmel manual Coordinate Measuring Machines.

Geomet 101

Geomet 101, our most popular package, offers great flexibility for inspecting parts in the lab or on the production floor. The graphical area on the right side of the display generates a pictorial representation of the measured features which serves as a visual guide for part programs and as a link to the final inspection results. Program writing is done in the self-teach mode, editing is easy and efficient. Geomet 101 includes a full suite of reverse engineering tools such as surface digitizing in 5 different modes. The GeoPlus option expands Geomet 101 to include powerful features such as Vector Point, customized tagging for printing and exporting and analytical tools for circular features. Geomet 101 is designed for the production environment where obtaining and tracking numerical solutions is preferred.

Geomet 301

Geomet 301, our most advanced system, offers the sophisticated user unbridled measuring power with the typical user friendliness of Geomet. It contains all the power of Geomet 101, GeoPlus and a host of other analytical tools to review and manipulate your part inspections. The time proven and inherent quality of the Geomet algorithms guarantee meaningful results when creating new and difficult relationships out of measured features and PCS's.

Geomet 301 offers an optional expansion package to unlock the power of surface point analysis against a CAD model. This power allows the user to align the CAD model with the part to be inspected. Then capturing of data points can be calculated against the model to obtain position within a profile zone.

Geomet 501

Based on the power of Geomet 301 and drives the Renishaw UCC2 CMM Interface. Geomet 501 adds analog contact scanning to the suite of measuring and reverse engineering tools.

Geomet Options

All levels of Geomet can be expanded to include advanced feature and hardware support. Some options are universal and can be used by all levels of Geomet. The following chart details the options available to Geomet.

Geomet Option Chart					
		Geomet Junior	Geomet 101	Geomet 301	Geomet 501
1	Geomet Junior Plus	X			
2	Direct Computer Control (DCC)		X	X	X
3	GeoPlus	X	X		
4	Renishaw UCC Scanning Controller		X		X
5	Renishaw Stylus Racks		X (1)	X(1)	X(1)
6	Motorized Probe Support		X (1)	X(1)	X(1)
7	LDI Line Laser Scanner		X (1)	X(1)	
8	Gauss Meter	X	X	X	
9	CAD Modeling			X	X
10	Apollo Low Force Touch Probe	X	X	X	
11	Robotic I/O Interface			X	
12	CNC Tool Offset Interface			X	
1 – Requires either DCC or UCC option.					

Geomet Junior Plus

By default, Geomet Junior does not "cycle" a part program and allows only one qualified stylus and one coordinate system, which can be redefined during inspections. This option expands Junior to allow unlimited Coordinate Systems, unlimited Stylus Support, Advanced PCS, Tolerance tools and program cycling.

GeoPlus

This option is designed to expand **Geomet 101** by adding many popular features without having to upgrade to the next full version. With GeoPlus you have access to circular profiles, planar profiles and program library support. Custom printouts and ASCII exporting are handled through feature attribute tagging.

GeoPlus Expansion Module	
Circular Profile	Graphical Circle Reporting
Planar Profile	Graphical Planar Reporting
Vector Point	Surface Vector Points
Geomet Gage R&R	Link to Gage R&R External Program
Custom Print Tags	Attribute Selection for Printing
SPC ASCII Export	Attribute Selection for Exporting
Feature Offset Reporting	Applying an Offset Value to Results
Library	Import / Export / Sharing Program Steps
Fast Start Menus	On-Touch access to launching inspection Programs
Out-of-Tolerance Notification	On Screen notification when an Out-of-Tolerance condition exists.
Geomet Gage R&R is a separate program that is linked to pass results with Geomet.	

Geomet Comparison Chart Tables

Measured Features						
	Jr.	101	GeoPlus	301	501	Notes
Points 1D/2D/3D	Std.	Std.		Std.	Std.	
Auto Point Generator		DCC		DCC	Std.	
Points 2D/3D Inside/Outside Radial	Std.	Std.		Std.	Std.	
Surface Vector Points		GeoPlus	Std.	Std.	Std.	XYZ/IZJ Known
Surface Vector Points		GeoPlus	Std.	Std.	Std.	XYZ Known
Surface Vector Points		GeoPlus	Std.	Std.	Std.	IJK Known
Surface Vector Points		GeoPlus	Std.	Std.	Std.	All Unknown
Surface Vector Points		GeoPlus	Std.	Std.	Std.	Import Table
Surface Vector Points				CAD	Std.	CAD Fitting
Gauss Meter Point		Gauss		Gauss		
2D Lines	Std.	Std.		Std.	Std.	
3D Constructed Lines	Std.	Std.		Std.	Std.	
Auto Line Generator		DCC		DCC	Std.	
2D Circles	Std.	Std.		Std.	Std.	
Auto Circles Generator		DCC		DCC	Std.	
Ellipse	Std.	Std.		Std.	Std.	
Planes	Std.	Std.		Std.	Std.	
Auto Plane Generator		DCC		DCC	Std.	
Spheres	Std.	Std.		Std.	Std.	
Cylinders	Std.	Std.		Std.	Std.	
Auto Cylinder Generator		DCC		DCC	Std.	
Cone	Std.	Std.		Std.	Std.	
Auto Cone Generator		Std.		Std.	Std.	
Slot / Web / Slot		Std.		Std.	Std.	
Oval Slot		Std.		Std.	Std.	
4 Point Intersect		Std.		Std.	Std.	
Bolt Hole Generator		Std.		Std.	Std.	
Surface Point Analysis				CAD	Std.	
Std. - Standard Feature DCC - Requires Direct Computer Control Gauss - Requires the Gauss Meter Support Option and Hardware CAD - Requires CAD Interface Option						

Reverse Engineering Tools						
	Jr.	101	GeoPlus	301	501	Notes
GeoTracer - Hard Probe Drag Scanning	Std.	Std.		Std.		GeoTracer
Touch Probe Data Clouds	Std.	Std.		Std.	Std.	
Line Auto Scan		DCC		DCC	Std.	
Radius Path Auto Scan		DCC		DCC	Std.	Cylinder End Scanning
4 Point Boundary Scan		DCC		DCC	Std.	
Radial Boundary Scan		DCC		DCC	Std.	
Cardinal Spline Generation	Std.	Std.		Std.	Std.	
3D Radial Boundary, Pie/Parallel Multi-Line Scanning					Std.	
SP25 / SP600 Analog Scanning Probe System					Std.	
Std. - Standard Feature DCC - Requires Direct Computer Control						

Coordinate System						
	Jr.	101	GeoPlus	301	501	Notes
Orient (Primary Datum)	Std.	Std.		Std.	Std.	
Align (Secondary Datum)	Std.	Std.		Std.	Std.	
Origin (Tertiary Datum)	Std.	Std.		Std.	Std.	
Fixture Coordinate System		Std.		Std.	Std.	Unlimited
Wobble, Rotary Axis		Std.		Std.	Std.	
U/V Rotary Axis Table					Std.	
Translate, Nominal Value	Std.	Std.		Std.	Std.	
Translate, Measured Value	Std.	Std.		Std.	Std.	
Rotate PCS	Std.	Std.		Std.	Std.	
Pivot Align	Std.	Std.		Std.	Std.	
Offset Align	Std.	Std.		Std.	Std.	
Clearance CS				DCC	Std.	
Unlimited PCSs	Jr. Plus	Std.		Std.	Std.	
Edit PCS Translations		Std.		Std.	Std.	
Edit PCS Rotations		Std.		Std.	Std.	
Edit Offset Align		Std.		Std.	Std.	
Edit FCS Features / Assignments		Std.		Std.	Std.	
Std. - Standard Feature						
DCC – Requires Direct Computer Control						
ADV – Requires Advanced PCS and Stylus option.						

Feature Analysis						
	Jr.	101	GeoPlus	301	501	Notes
Circle Profile	Jr. Plus	GeoPlus	Std.	Std.	Std.	
Circular Paper Gauge	Jr. Plus	GeoPlus	Std.	Std.	Std.	
Planar Profile	Jr. Plus	GeoPlus	Std.	Std.	Std.	
Planar Data Point Report	Jr. Plus	GeoPlus	Std.	Std.	Std.	
Data Cloud Analysis				CAD	Std.	
GeoSIM, Flexible Hard Gauge				CAD	Std.	
Targeted Vector Point				CAD	Std.	
Diameter Averaging		Std.		Std.	Std.	Math Support
Min/Max/Spread Calculations		Std.		Std.	Std.	Math Support
Inscribed Diameter		Std.		Std.	Std.	
Feature Averaging				Std.	Std.	
Std. - Standard Feature						
GeoPlus – Requires GeoPlus Option						
ADV – Requires Advanced PCS and Stylus option.						

Text and Image Features						
	Jr.	101	GeoPlus	301	501	Notes
Text Statements	Std.	Std.		Std.	Std.	
User Prompts	Std.	Std.		Std.	Std.	
Inline program Text Entry	Std.	Std.		Std.	Std.	
Display Image prompts	Std.	Std.		Std.	Std.	
Manual Entry Steps		Std.		Std.	Std.	
Std. – Standard Feature						

Constructions						
	Jr.	101	GeoPlus	301	501	Notes
Distance (1D, 2D, 3D)	Std.	Std.		Std.	Std.	
Extended Distances				Std.	Std.	
Bisector (2D/2D)	Std.	Std.		Std.	Std.	
Bisector (3D/3D)	Std.	Std.		Std.	Std.	
Intersection	Std.	Std.		Std.	Std.	
Angle	Std.	Std.		Std.	Std.	
Construct Offset Point		Std.		Std.	Std.	
Construct Offset Line		Std.		Std.	Std.	
Construct Line	Std.	Std.		Std.	Std.	
Construct Circle	Std.	Std.		Std.	Std.	
Construct Plane	Std.	Std.		Std.	Std.	
Construct Offset Plane		Std.		Std.	Std.	
Construct Sphere	Std.	Std.		Std.	Std.	
Construct Cylinder	Std.	Std.		Std.	Std.	
Construct Cone	Std.	Std.		Std.	Std.	
Recall Features	Std.	Std.		Std.	Std.	
Attribute Changes	Std.	Std.		Std.	Std.	
Cone Offset Diameter	Std.	Std.		Std.	Std.	
Cone Diameter at Offset	Std.	Std.		Std.	Std.	
Cone Drop Ball Fitting	Std.	Std.		Std.	Std.	
Sphere Diameter at Offset	Std.	Std.		Std.	Std.	
Sphere Offset Diameter		Std.		Std.	Std.	
Recall PCS Components		Std.		Std.	Std.	
Cardinal Spline Generation	Std.	Std.		Std.	Std.	
Random Feature Selections		Std.		Std.	Std.	
Std. - Standard Feature GeoPlus – Requires GeoPlus Option ADV – Requires Advanced PCS and Stylus option.						

Tolerance						
	Jr.	101	GeoPlus	301	501	Notes
Bilateral	Std.	Std.		Std.	Std.	
Positional RFS/LMC/MMC	Std.	Std.		Std.	Std.	
Datum Bonus Tolerance	Std.	Std.		Std.	Std.	
Circularity	Std.	Std.		Std.	Std.	
Straightness	Std.	Std.		Std.	Std.	
Perpendicularity	Std.	Std.		Std.	Std.	
Parallelism	Std.	Std.		Std.	Std.	
Cylindricity	Std.	Std.		Std.	Std.	
Angularity	Std.	Std.		Std.	Std.	
Concentricity	Std.	Std.		Std.	Std.	
Flatness	Std.	Std.		Std.	Std.	
Preset Tolerance Blocks	Jr. Plus	Std.		Std.	Std.	
Process Control Tolerance				Std.	Std.	Multiple Tolerance Zones
Out-of-Tol Flash Message		Std.		Std.	Std.	
Out-of-Tol Watermark		Std.		Std.	Std.	
Profile Band on Data Clouds				CAD	Std.	
Profile Color Surface Color Map				CAD	Std.	
Cylinder/Plane Runout	Std.	Std.		Std.	Std.	
Std. - Standard Feature. CAD – Requires CAD Interface Option. ADV – Requires Advanced PCS and Stylus Option. PROG – Geomet Junior programming Option.						

Probes and Sensors						
	Jr.	101	GeoPlus	301	501	Notes
Hard Ball Probes	Std.	Std.		Std.		
Electronic Ball Probes	Std.	Std.		Std.	Std.	
Disc Probes	Std.	Std.		Std.		
Taper Probes	Std.	Std.		Std.		
Cylinder Probes	Std.	Std.		Std.		
Video Cross Hair	Std.	Std.		Std.		
Manual Entered Values	Std.	Std.		Std.		
LDI Line Laser Scan Probe		LDI		LDI		
SCR200 Stylus Rack		DCC		DCC	Std.	
MCR20 Stylus Rack		DCC		DCC	Std.	
Motorized Probe Heads		DCC		DCC	Std.	
Manual Indexing Heads		Std.		Std.		Supports manual and DCC style CMMs
Renishaw RTP20 Indexing Head					Std.	
Renishaw Scanning Heads		UCC		UCC	Std.	
Manual Ball Re-Qualify	Std.	Std.		Std.	Std.	
Auto Ball Re-Qualify		DCC		DCC	Std.	
Reference Sphere Move	Std.	Std.		Std.	Std.	
Unlimited Sensors	Jr. Plus	Std.		Std.	Std.	
Apollo Low Force Stylus	LOW	LOW		LOW		
Multiple Stylus db Support		Std.		Std.		
Ring Gage Qualifications		Std.		Std.		
Stylus database Edit Tool		Std.		Std.		
Std. - Standard Feature LDI – Laser Design RPS150/450 LOW – Apollo Low Force CMM Touch Probe						

Reporting Formats and Controls						
	Jr.	101	GeoPlus	301	501	Notes
Feature PropertyTool	Std.	Std.		Std.	Std.	
Selective Printing by Feature	Std.	Std.		Std.	Std.	
Selective Printing by Attribute	Jr. Plus	GeoPlus	Std.	Std.	Std.	
Concise Report				Std.	Std.	Condensed Reporting.
Inch / Metric	Std.	Std.		Std.	Std.	
Radius / Diameter	Std.	Std.		Std.	Std.	
Cartesian / Polar	Std.	Std.		Std.	Std.	
Deg.Dec. / Deg Min Sec	Std.	Std.		Std.	Std.	
SPC Export Selections	Jr. Plus	GeoPlus	Std.	Std.	Std.	
Report Offset Values	Jr. Plus	GeoPlus	Std.	Std.	Std.	
Feature Filtering/Sorting	Std.	Std.		Std.	Std.	
Out-of-Tolerance Reports		Std.		Std.	Std.	
Out-of-Tolerance Flash Msg.		Std.		Std.	Std.	
Out-of-Tolerance WaterMark		Std.		Std.	Std.	
Custom Ordered Reports				Std.	Std.	
Std. – Standard Feature GeoPlus – Requires GeoPlus Option						

Special Functions						
	Jr.	101	GeoPlus	301	501	Notes
Import IGES CAD Model				CAD	Std.	
Library Files	Jr. Plus	GeoPlus	Std.	Std.	Std.	
SPC ASCII Exporting	Jr. Plus	GeoPlus	Std.	Std.	Std.	
File Locking	Jr. Plus	GeoPlus	Std.	Std.	Std.	
Auto Load Robotic Interface		I/O		I/O		
Digital I/O Interface		I/O		I/O		
CNC Tool Offset Feedback		CNC		CNC		
Multiple Stylus Probing	Jr. Plus	Std.		Std.		
Export IGES Model	Std.	Std.		Std.	Std.	
Export DXF Data Points	Std.	Std.		Std.	Std.	
Geomet Gage R&R		Enh.		Enh.	Enh.	
GeoTracker		Enh.		Enh.	Enh.	
WWW Help Access	Std.	Std.		Std.	Std.	
Triangle Calculator		Std.		Std.	Std.	
EZ Launch Menu System		GeoPlus	Std.	Std.	Std.	
Customized Fast Access Start Menu		GeoPlus	Std.	Std.	Std.	
GeoStat – Real-time SPC	Enh.	Enh.	Enh.		Enh.	
Part Program Tracking				Std.	Std.	
In-Line Math Calculator	Std.	Std.		Std.	Std.	
Std. – Standard Feature CAD – Geomet CAD option GeoPlus – Requires GeoPlus option I/O - Input / Output Digital Programmable Interface CNC – CNC Tool Offset Digital Option Enh – Enhancement Program (Stand Alone)						

Program Editing						
	Jr.	101	GeoPlus	301	501	Notes
Insert Features	Std.	Std.		Std.	Std.	
Move Features	Std.	Std.		Std.	Std.	
Delete / Un-Delete	Std.	Std.		Std.	Std.	
Delete Permanently	Std.	Std.		Std.	Std.	
Library Auto Link Update		GeoPlus	Std.	Std.	Std.	
Jump-To Navigation	Std.	Std.		Std.	Std.	
Assign Feature Labels	Std.	Std.		Std.	Std.	
Search on Feature Labels	Jr. Plus	Std.		Std.	Std.	
Recalling Features	Std.	Std.		Std.	Std.	
Recalling Features into new PCS	Std.	Std.		Std.	Std.	
Copy and Array Program Steps		GeoPlus	Std.	Std.	Std.	
Copy and Append Feature		Std.		Std.	Std.	
Undo Last Feature	Std.	Std.		Std.	Std.	
Edit History Tool		Std.		Std.	Std.	
Std. - Standard Feature GeoPlus – Requires GeoPlus Option						

Program Editing – Direct Computer Control Tools						
	Jr.	101	GeoPlus	301	501	Notes
Optimize DCC Circles		Std.		Std.	Std.	
Offline DCC Points				Std.	Std.	
Offline DCC Circles		Std.		Std.	Std.	
Offline DCC Cylinders		Std.		Std.	Std.	
Offline DCC Lines		Std.		Std.	Std.	
Offline DCC Planes		Std.		Std.	Std.	
DCC Clearance Planes		Std.		Std.	Std.	
High Accuracy Motion Targeting		Std.		Std.	Std.	
High Accuracy Feature Averaging		Std.		Std.	Std.	Test, Compare and ReRun
Re-Teach Motion Path	Std.	Std.		Std.	Std.	
Single Step Motion	Std.	Std.		Std.	Std.	
Motion Parameter Control	Std.	Std.		Std.	Std.	
Insert / Teach Motion Path	Std.	Std.		Std.	Std.	
Offset and Copy Motion Path	Std.	Std.		Std.	Std.	
Joystick in Part Coordinates	Std.	Std.		Std.	Std.	
MP Capture on Specified Targets				Std.	Std.	
Motion Path Test		Std.		Std.	Std.	
Feature Specific Motion Disable	Std.	Std.		Std.		
One-Step Motion Edit		Std.		Std.	Std.	
ReRun Program Steps		Std.		Std.	Std.	
Std. – Standard Feature						