

Version V1.1
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MaqueTools toolbar by Mitch Heynick

This collection of tools is only offered for Rhino V5 and later
Note: These tools do not run on native Mac versions of Rhino

Group/Tool

Explanation (+ = New ; * = Updated, Python Script)

Alignment

Align Bottom to Point	Aligns lowest point of an object to the Z-level of a picked point	
Match Object Z Level	Moves object in Z to a picked point	
Object Point to New Z	Move point on object to new Z Level (keyboard or pick)	
EquiCenter Objs X-Y	Redistributes objects center to center evenly in world X and/or Y (uses bounding box)	
EquiSpace Objs X-Y	Redistributes objects to have equal space between them in world X and/or Y	
Closest Dist btw Objs	Iteratively finds the closest distance between 2 surface or polysurface objects	
Stack objects	Stack objects in Z or along an axis	
Project Volumes	* Projects volumes to surfaces or meshes (objects will touch or be embedded in surface)	fixed bug
Align bottom to 0	Moves object(s) vertically so thier lowest point is on world Z0 plane	

Import

BatchImport	Batch import 3DM, DXF, DWG, STEP, IGES, STL, Solidworks files
Ascii Grid Import	Import ASCII Grid files and create point cloud, mesh or surface
Import XYZ RGB	Import XYZ RGB color point files

Export

Export STL	Export STL files with various presets for 3D printing
Export XYZ RGB	+ Export XYZ RGB color point files

Layer Tools

Random LayerColors	Applies a random layer color to a selected group of layers or all layers
Interp LayerColors	Applies an interpolated series of colors to a selected group of layers or all layers
Flatten Layers	Merges all sublayers up into the top level parent layer
Merge Layers	Merges a group of layers into one

BoundingBox

XY Minimum BB	* Finds the minimum bounding box of 2D/3D objects in XY direction (returns rectangle)	improved speed/accuracy
BoundingBox w/Size	* Creates a 2D or 3D bounding box with dimensions as text dots, plus area(2D) or Volume(3D)	added 2D box for planar
Adjust BoundingBox	Creates a bounding box with user adjustable dimensions in 3 axes	

Point Functions

Ordered 3D Point Grid	Generate ordered grid of points in XY or XYZ
Random 3D Point Dist	Generate a collection of randomly spaced points in 3D
Create color point cloud	+ Creates a colored point cloud from colored points
Explode color point cloud	+ Explodes a colored point cloud into colored points
Average Points	+ Average a set of points and/or point clouds

Offset Curves

OffsetCrvs2SidesEnds	Offset multiple curves both sides with end choices
OffsetClosedCrvsInOut	Offset multiple closed curves inside, outside or both
ClosedCrvMultiOffset	Offset one curve multiple times to the outside
MultiBooleanOffset	Creates multiple combined offset outlines from a set of closed planar curves
OffsetObject(s)Outline	Creates an offset outline of a 3D object
OffsetPtsAlongCrv	From a start point, creates individual (variable) distance offsets of the point along the curve

Curve Tools

Scale Circles	Scales selected circles by a factor
Replace Circle Dia	Replaces circles of specified diameter with circles of new diameter
Change Circle Dia	Replaces all selected circles with circles of new diameter
Force Crv Direction	Makes all selected closed planar curves CW or CCW
Insert PL in Curve	Insert a polyline into a curve
PL by Angle+Length	Create a polyline by inputting successive lengths and relative polar coordinates
UnrollPolyline	"Unrolls" a polyline along the X axis
PlanarizeCurve	Makes a "near planar" curve planar (best fit or active Cplane)
ExtendClosePolyline	+ Closes a polyline by extending the ends(check parallel)
SplitPolylineByAngle	+ Splits a polyline at or above a specified kink angle
DetectOverlaps	Detect overlapping coplanar curves (does not fix anything!)

Curve Repair

Rem Short Crv Segs	Removes segments of curves smaller than file tolerance
DPRfit Polyline to Tol	Douglas-Peucker refit polyline to tolerance algorithm
Remove Xtra PL Pts	Remove unnecessary polyline points (angle tolerance)
Reduce Crv Pt Count	Rebuild curves with less points (reduction factor)
RebuildReduce PLines	Fit smooth curves to polylines with reduced point count (reduction factor)
Rebuild Crvs ByLength	Rebuild multiple curves with a point count proportional to length

Surf Functions

Make Quad Srfs	Make untrimmed quad surfaces from closed 4 sided polylines
Conv Srfs to Quads	Make untrimmed quad surfaces from trimmed surfaces if possible
SimplifyPlanarSrfs	Replace planar surfaces or polysurface faces with trimmed planes if possible
PlanarizeSurface	Makes a "near planar" surface planar (best fit or active Cplane)
Retrim Surfaces	Untrim and retrim surfaces (to try to fix bad objects)
Multiple Planar Srfs	Make one planar surface from each selected closed planar curve
Multiple UnrollSrfs	Unroll multiple surfaces or polysurfaces
SrfFromPointGrid	Creates a surface from an existing ordered rectangular grid of points (aligned with XY axes)
RandomZGridAndSrf	Creates a point grid and/or surface with ordered X and Y and random height Z points
CompletePlanarSrf	+ Creates a planar surf from incomplete edges (one side open)

Curve Piping

MultiRoundPipe	Make round pipes from a selection of curves
MultiSquarePipe	Make square pipes from a selection of curves
MultiRectPipe	Make rectangular pipes from a selection of curves
Profile MultiPipe	Make profile pipes from a selection of curves (choose profile on Z0 plane)

Copy/Array

Circles at Points	Creates a circle of user specified diameter at all selected points
Spheres at Points	Creates a sphere of user specified diameter at all selected points
Copy Object to Points	Copies one object from one picked point to a group of selected points
Array Diagonal	Arrays a set of objects along an XY or XYZ diagonal (Active Cplane dependent)
Array Helical	Arrays a set of objects along a helix (stair-like)(Active Cplane dependent)
ArrayLinearDistribute	Arrays (distributes) a set of objects along a line between two points

Split/Trim

MultiBoundaryTrimCurves	+ Trims curves inside or outside one or more closed boundaries (nested also!)
Mutual Split All Objs	+ Split all selected objects with each other (curves, surfaces, polysurfaces, no points or meshes)
SplitObjsWCPlane	+ Splits objects with active Cplane

Transforms

MultiObj FlowCrv	Flow one object from one base curve to multiple destination curves
RemapObjs to World	Remap objects from 3 points to world Z 0
RemapPlanarObjsToW	Remap planar objects from their object plane to world XY plane
Comp/Exp Obj Spacing	Compress or expand the space between objects by scaling their distance from a given point * the above does not check for interferences produced by the scaling, objects may overlap
Uniform Scale Objs Ctr	Scales objects uniformly in 3D about their bounding box center or centroid (LMB/RMB)
NU Scale Objs Ctr	Scales objects non-uniformly in 3D about their bounding box center or centroid (LMB/RMB)
Random Scale Objs Ctr	Scales objects about their centers randomly in X, Y, and Z (with max and min in each axis)
Random Rotate Objs Ctr	Rotates objects about their centers randomly (with angle limitation)

Color Functions

RandomColor	Colors a series of objects randomly (display color)
RandomColorRange	Colors a series of objects randomly within a specified color range
ProgressiveColorRange	Colors objects with an interpolation between a color and black or white
InterpolateColorRange	Colors objects with an interpolation between two colors

Sel by Object Type

Selfence	Select objects by object type (lines, circles, etc.) - all self-explanatory except: Use a pre-existing curve fence to select objects
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Sel by Obj Property

Self by Linetype	Select objects by object property (length, area, etc.) Select curves by linetype
Sel Crvs by Length	* Select curves by length criteria (greater than, less than, equal to, etc.)
Sel Crvs by Area	* Select closed planar curves by area (greater than, less than, equal to, etc.)
Sel by Radius	* Select arcs or circles by radius (greater than, less than, equal to, etc.)
SelSameRadArcsCircles	* Find arcs or circles with same radius as selected
Sel Srfs by Area	* Select surfs or polysurfs by area (greater than, less than, equal to, etc.)
Sel Meshes by Area	* Select meshes by area (greater than, less than, equal to, etc.)
Sel Small Srf+PSrf	Select surfaces or polysurfaces less than a certain size (area)
Sel Small Meshes	Select meshes less than a certain size (area)
Sel by Z Level	Selects (or isolates) planar curves and surfaces by Z level or a range of Z levels (LMB/RMB)
SelConnectedObjs	Selects all objects connected to a picked point (can be slow with vast numbers of objects)
SelSelfIntersectCrvs	Selects all self intersecting curves and puts points at intersections
FindSimilarVolumes	Finds similar (near-duplicate) volume objects wherever they are in file

View and Display

ResetViewToTitle	Resets a named view to the stored parameters
UpdateNamedView	Replaces stored named view with the current one
SetBackgroundColor	Sets all viewport backgrounds to preset grays or picked color
GradientBackground	Choose gradient background presets in current viewport using GradientView

SliceNFlat

Slices objects, numbers slices, and prepares flat layouts for cutting