

# T-Splines 2.0 WIP 11B for Rhino commands at-a-glance

November 11, 2008

L= left mouse button R= right mouse button

Download the latest version of the WIP at [www.tsplines.com/latestversion.html](http://www.tsplines.com/latestversion.html)

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## Main Toolbar



L: **tsConvert**. Convert NURBS and meshes to T-Splines.

R: **tsConvertToRhinoSrf**. Convert T-Splines to Rhino NURBS surfaces.

L: **tsmBox**. Create a T-Splines box primitive.

L: **tsLoft**. Create a T-Splines surface by lofting curves while constraining areas of local detail.

L: **tsSkin**. Fit a T-Splines surface to a non-rectangular network of curves.

L: **tsControlPolygonToSrf**. Create a T-Spline surface from a control polygon of line segments.

R: **tsExtractControlPolygon**. Extract the control polygon from a T-Spline.

L: **tsImportOBJ**. Import meshes with n-gons into Rhino with minimal triangulation.

L: **tsExtrude**. Extrude T-Splines faces and edges

L: **tsCrease**. Locally crease T-Splines edges. Perfectly sharp or rounded creases are possible.

R: **tsRemoveCrease**. Remove a crease from a T-Spline.

L: **tsThicken**. Quickly make an approximate offset of a T-Spline with rounded or sharp edges.

L: **tsInsertPoint**. Add control points to a specific part of the T-Spline mode.

R: **tsDeleteIsocurveSegment**. Delete isocurve segments to eliminate unneeded geometry in a model.

L: **tsExtendIsocurve**. Similar to tsInsertPoint; adds control points by extending a T-Point.

L: **tsMerge**. Merge two T-Splines surfaces or untrimmed NURBS into a single surface.

L: **tsMesh**. Mesh a T-Spline. The Rhino mesh command works also, but tsMesh is optimized for T-Splines.

L: **tsPolyMode**. Convert a smooth T-Spline surface to a T-Mesh for advanced editing options.

R: **tsSmoothMode**. Convert a T-Mesh to a smooth T-Splines surface to use commands that only work on a smooth T-Splines surface (tsInsertPoint, tsMerge, tsSurfacePoints...) and for export to NURBS.

L: **tsEditMode**. Activate the translate manipulator for moving grips. Also enables hotkeys.

L: **tsSurfacePoints (smooth)**. Manipulate points on the T-Splines surface with a gradual falloff. R: PointsOff

L: **tsSurfacePoints (local)**. Manipulate points directly on the T-Splines surface; only one point will move. R: PointsOff

L: **tsScriptFlattenPoints**. Flatten control points to the average plane passing through the control points.

L: **tsSetStarSmoothness**. Smooth the surface near star points for higher quality export.

L: **tsSetSurfaceLayout**. Determine how the T-Spline will split into NURBS rectangular regions.

L: **tsSplitCurves**. Split curves that intersect within a given tolerance.

L: **tsScriptExtrudeControlPolygon**. Extrude a 2d control polygon to 3d; often used before generating a T-Spline with tsControlPolygonToSrf.

L: **Hotkeys**. Assign hotkeys to T-Splines and Rhino commands. Hotkeys only work when tsEditMode is active.

## Primitives toolbar



L: **tsmBox**. Create a T-Splines box primitive. Option: with axial symmetry.

L: **tsmPlane**. Create a T-Splines plane primitive. Option: with axial symmetry.

L: **tsmSphere**. Create a T-Splines sphere primitive. Option: with axial or radial symmetry.

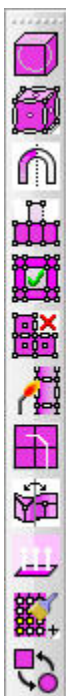
L: **tsmCylinder**. Create a T-Splines cylinder primitive. Option: with axial or radial symmetry.

L: **tsmCone**. Create a T-Splines cone. Option: with axial or radial symmetry.

L: **tsmTorus**. Create a T-Splines torus. Option: with axial or radial symmetry.



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## Polytools toolbar

- L: **tsPolyMode**. Convert a smooth T-Spline surface to a T-Mesh for advanced editing options.
- R: **tsSmoothMode**. Convert a T-Mesh to a smooth T-Splines surface for export to NURBS and T-Splines surface editing options (tsInsertPoint, tsMerge, tsSurfacePoints...)
- L: **All grips on**. Turn on all T-Splines grips (face, edge, vertex) and enters tsEditMode. R: Grips off.
- L: **tсмSymmetry**. Mirror a T-Mesh and apply axial or radial symmetry. R: **Turns off symmetry**.
- L: **tсмAppend**. Similar to extrude edge; add a new face to the edge of a T-Mesh.
- L: **tсмFillHole**. Fill a hole in a T-Mesh by clicking on an edge of the hole.
- L: **Delete**. Delete a point, edge or face from a T-Mesh.
- L: **tсмWeld**. Weld points of a single T-Mesh; or to combine two T-Meshes into one. R: **tсмUnweld**. Unweld points of a T-Mesh. The unwelded points will remain on top of each other until they are moved.
- L: **tсмInsertPoint**. Insert points on a T-Mesh; integrated with Rhino's OSnaps.
- R: **tсмSubdivideFace**. Subdivide one T-Mesh face into four faces.
- L: **tсмLayout**. Change star points to T-Points, and visa versa, for more control over surface direction and smoothness.
- L: **tсмFlip**. Flip the T-Mesh direction.
- L: Toggle **paint selection mode**: Activate "paint" selection of grips in tsEditMode.
- L: Toggle **smooth preview**: Turn smooth preview on and off in tsEditMode.

## Grips toolbar



- L: **All grips on**. Turn on all T-Splines grips (face, edge, vertex) and enter tsEditMode. R: Grips off.
- L: **Vertex grips on**. R: Grips off.
- L: T-Mesh **edge grips on**; tsEditmode is activated. R: Grips off.
- L: T-Mesh **face grips on**; tsEditmode is activated. R: Grips off.

## Manipulator toolbar



- L: tsEdit mode: Activate the **translate manipulator** for moving grips and enables hotkeys. R: Hide manipulator.
- L: tsEdit mode: Activate the **rotate manipulator** for moving grips and enables hotkeys. R: Hide manipulator.
- L: tsEdit mode: Activate the **scale manipulator** for moving grips and enables hotkeys. R: Hide manipulator.

## Selection toolbar



- L: Toggle **paint selection mode**: Activate "paint" selection of grips in tsEditMode.
- L: **Grow grip selection**: Increase the number of face, edge, or vertex grips in the selection.
- L: **Shrink grip selection**: Decrease the number of face, edge, or vertex grips in the selection.
- L: **Select grip loop**: Select a loop of edges, faces, or vertices, based on the original selection.
- L: **Select edge ring**: Select a ring of edges based on the original edge selection.