

ASC file format

Version 1.0

The ASC format was designed as a part of the ATH project¹ to import horn geometries into Autodesk Fusion 360 CAD for further work. First, a user script² must be imported into Fusion 360. This script, when executed, takes an ASC file as its input and automatically creates the geometry there defined. An ASC file itself is a simple ASCII text file with the syntax described below.

Each line of an ASC file represents a definition of a graphical entity or a command. Items on the line are separated (terminated) by semicolons (;), including the last one. The first item, always an integer, defines the type of information contained in the rest of the line. The following list a summary of the available content. Optional items are in brackets.

Type Syntax / example / description

8	8; Starts a new sketch in the XY plane.
9	9; Starts a new sketch in the YZ plane.
10	10; [Z0;] 10; 7.5; Starts a new sketch in a XY plane at the height Z0 (default Z0=0.0).
12	12; R; 12; 16.2; Draws a circle in the XY plane with the center at [0, 0, Z0] with radius R.
40	40; X; Y; [Z;] 40; -1.856884; -0.327419; Defines a sketch point at coordinates [X,Y,Z] (default Z=Z0). Sketch points are internally numbered as they are added to the current sketch, starting at 0 each time a new sketch is created. All the higher graphical primitives (lines, curves, etc.) within the sketch are then created using the indices of the previously added points.
42	42; i0; i1; 42; 6; 4; Draws a line connecting the points i0 and i1.
50	50; Creates a closed spline using all the points defined for the current sketch.
51	51; Creates a spline using all the points defined for the current sketch (generally not a closed curve).
52;	52; i0; i1; ...; iN; 52; 2; 0; 4; 5; Creates a spline through points i0, i1, ..., iN.
54;	54; i0; i1; 54; 0; 1; Creates a rectangle with corner points i0, i1.

¹ www.at-horns.eu/

² www.at-horns.eu/ext/athex/ATH_Fusion360_SketchImport.zip