

EDU[**CAD**]TION **STUDY GUIDE**

How to Export Clean DXF Files

Chapter 4, Lesson 2

SendCutSend

Why DXF Matters

- A **DXF** (Drawing Exchange Format) file is the standard format for 2D manufacturing processes such as laser cutting, waterjet cutting, and plasma cutting.
- It represents the outlines of your part. A clean DXF ensures the CNC machine knows exactly what to cut, without misinterpreting extra lines, construction geometry, or scaling issues.

Method 1: Exporting Directly from a Sketch

- You can export a DXF directly from your 2D sketch without modeling a 3D part.
- **Steps:**
 1. Right-click on your sketch in the browser tree and select **export DXF** (see Figure 1.1).
 2. In the dialog box, select your **units** (inches or millimeters). Always double-check scaling after import (see Figure 1.2).
 3. Review and adjust the visibility options: **Visible Geometry**: Only exports visible lines (see Figure 1.2).
 4. Name your file and click save (see Figure 1.3).
- Points, Projected Geometry, Construction Lines: These can cause problems if left on, you can turn them off in the Export DXF window.
- **Note:** Deselect *Construction Geometry* and *Projected Geometry* to avoid stray or overlapping lines.
- **Common Issue:** If construction lines are exported, they can confuse SendCutSend's software, leading to broken geometry or failed uploads.

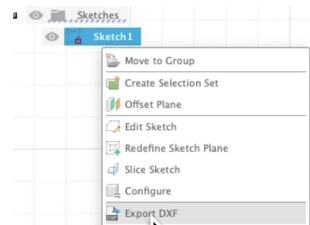


Figure 1.1

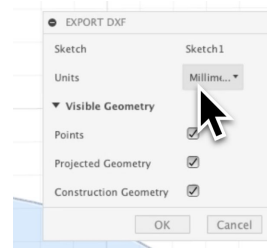


Figure 1.2

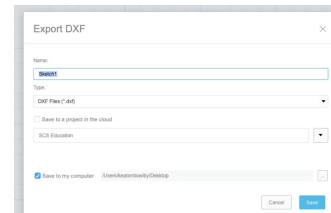


Figure 1.3

Method 2: Creating a Clean Projected Sketch

- This is the most reliable way to create a clean DXF, especially when working with solid bodies.
- **Steps:**
 1. Click on **flange**, and create a sheet metal body of your part (see Figure 1.4).
 2. Hide the original sketch, and on the face you want to export, create a new sketch.
 3. Fusion automatically **projects** the outer geometry of the surface onto this sketch.
 4. Finish the sketch, and now you'll see the new sketch appears in the browser (see Figure 1.5). Right-click it in the browser, and choose **Export DXF**.
 5. Verify units, and since this is a clean projection you can leave all options checked, and save.

Result: A perfectly clean 2D outline, free of extra geometry or artifacts.

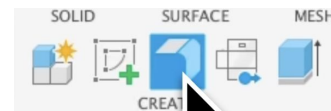


Figure 1.4

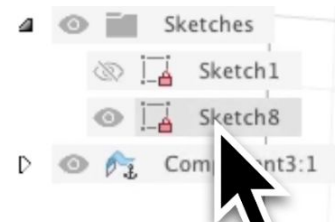


Figure 1.5

Method 3: Using Flat Pattern for Sheet Metal

- The Flat Pattern feature is specific to sheet metal workflows and allows you to unfold a bent part for cutting.
- **Steps:**
 1. Switch to the Sheet Metal workspace and select create a **Flat Pattern** (see Figure 1.6).
 2. Choose a stationary face - the surface around which the bends unfold (see Figure 1.7).
 3. The software flattens the model and adds bend centerlines (see Figure 1.8).
 4. Use the DXF Export tool to save the flat pattern.
 5. Verify units and click save.

Result: The exported DXF includes bend lines, ready for fabrication and bending setup in SendCutSend's app.

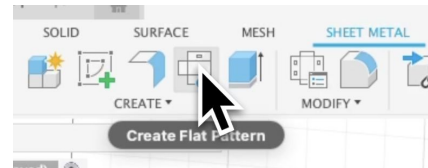


Figure 1.6

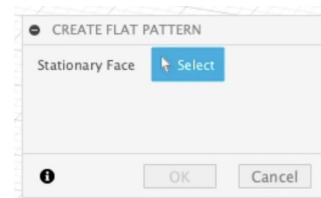


Figure 1.7

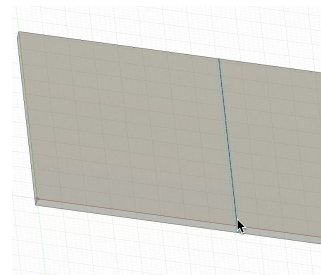


Figure 1.8

Common Export Issues & Fixes

- **Problem:** Broken geometry when importing into SendCutSend.
Fix: Disable construction and projected geometry before exporting.
- **Problem:** Scaling or unit mismatch.
Fix: Always confirm units in both Fusion and SendCutSend (inches vs. millimeters).
- **Problem:** Multiple nested parts in one DXF.
Fix: Avoid nesting, SendCutSend uses advanced automatic nesting, so separate parts save time and money. Manually nesting can lead to misreads or higher costs. Always upload parts as separate DXFs.

Design for Sheet Metal

- When exporting DXFs for parts with bends, always consider bend allowances.
- Non-sheet metal bodies do not calculate bend stretch automatically, which can cause parts to be cut too short or too long.
- Flat patterns account for this automatically by unfolding the part with correct geometry.

Summary

Exporting clean DXF files ensures your designs are ready for precise, efficient manufacturing. Using clean sketches or flat patterns minimizes errors and guarantees your parts import correctly into SendCutSend's platform.

Learn more at <https://sendcutsend.com/education/>