

By MS Version 14.05.25.1

Subject: HST suite: lines preparation

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## 1 WOLFSON UNIT'S 'DXF TO LFH' CONVERTER

This is a file conversion utility available for free on the Wolfson Unit's [Customer Download Area](#). Just scroll down to Free Software & Demos to download the installation file.

Our Customer Download Area is password protected. If you are a registered user, just log on with your current email address and password or click on the 'Lost your password?' link to obtain your credentials. If you are not a registered user, then please fill in the boxes in the 'Register' section and click 'Register'.

## 2 TIPS AND HINTS FOR DXF TO LFH USERS

1. **Section Spacing** - The Wolfson Unit packages are sensitive to the spacing defined in the LFH file and it is useful to consider this when using another package to create the DXF file. Refer to the Wolfson Software help system for more details on section spacing, numbers and intervals.
2. **Use half sections** - It is best to keep the DXF file simple with ideally half sections defined with positive transverse offset. This will lower the chances of any spurious lines being read and translated as sections.
3. **Limits** - The maximum number of points per curve or line is 5000 and the maximum number of curves or lines is 1000. The DXF to LFH converter will notify the user if the DXF file exceeds this.
4. **Use continuous curves** - Each transverse section defined in a DXF file must be a single, continuous curve. For example, a transverse section in way of a hard chine must be one curve, not two curves intersecting at the chine.
5. **Resolution** - The resolution of the hull definition created in the DXF is directly related to the resolution of the final LFH file. It is therefore important to have enough points on a section such that straight lines between the points will adequately model the shape of the hull.
6. **CAD program** - DXF files must be in ASCII AutoCad 2014 or earlier. These may be created with most CAD software, including Rhinoceros and MaxSurf. For further information see the File Formats section of the DXF to LFH manual.
7. **Line types** - The DXF to LFH converter can import two-point lines, arcs, polylines with and without bulges, and splines. Splines defined via control points or fit points can be converted to the LFH format.
8. **Two dimensional body plans** - These can present problems in mapping the curves (DXF to LFX main menu > Tools > Map Curves), and also stitching the curves (Tools > Stitch All Curves). We recommend converting 2d DXF body plans to 3d DXF files using the native CAD program, rather than the DXF to LFH converter. The option 'Tools > Enter X Spacing for 2d lines' is useful for expanding 2d DXF files to 3d.

9. **Bulbous bows** - if two transverse sections are found at the same longitudinal position X, such as the closed transverse section through a bulbous bow and the forepeak section above, two approaches may be used:

- keep these two curves separate, or
- join these two curves with a vertical line along the vessel's centre plane. This vertical line would start at the top of the bulb at centre and end at the underside of the forepeak.

### 3 TIPS AND HINTS FOR RHINOCEROS USERS

1. **Coordinate system** - rotate the hull geometry as appropriate to match the coordinate system used in Wolfson Software. Refer to the Wolfson Software manuals for more details.
2. **Midship section** - the stern sections should have negative X values and the bow sections should have positive X values. The position of X=0 should be close to midships, as convenient, it need not lie on a defined section, but often it does.
3. **Layers** - merge all layers containing the hull geometry and delete the others, including those containing text and dimensions.
4. **Contour** - when a hull is modelled as a surface or set of surfaces, use the Contour option to obtain a set of sections at the appropriate spacing.
5. **Use half sections** - Delete all half sections having a negative transverse offset eg negative Y.
6. **Use continuous lines** - Each transverse section must be a continuous line with no breaks. Select all the lines of a section and use the Join command to create a continuous line. If the program is unable to do so, join manually any gaps between adjacent lines.
7. **Section direction** - Section points should start on the centreline and move around the section to the sheer, deck or any point above the flotation waterline. Please refer to the Section Definition topic of the HST help for more details. Use the Analyze > Direction option of Rhinoceros to show the direction of a section. Flip the direction where required.
8. **Edit scheme** - It is advisable to Save a Wolfson export scheme for dxf files following the recommended settings below. The scheme can then be applied whenever a dxf is exported for use in Wolfson Software.

Figure 1 'AutoCAD Export Schemes' dialog in Rhinoceros, General tab

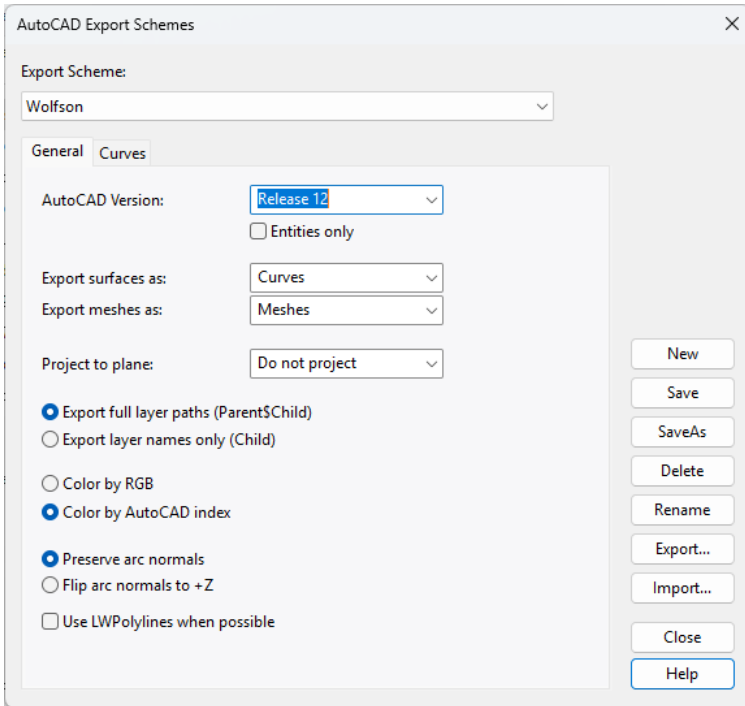


Figure 2 'AutoCAD Export Schemes' dialog in Rhinoceros, Curves tab

