

Introducing AOMS Fit

Designing a foot orthosis is as easy as casting a net
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Purpose of AOMS Fit: It is a software program for designing custom foot orthoses for 3D printing.

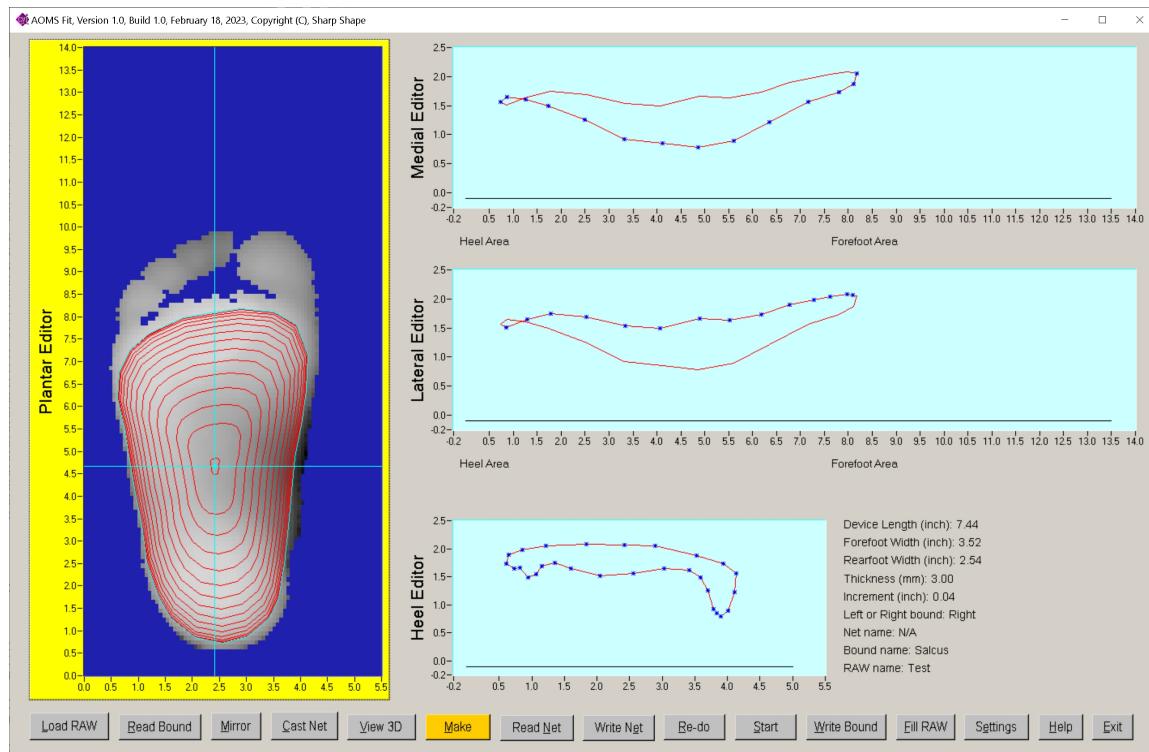
Distinguishing features: AOMS Fit is intuitive to operate. AOMS Fit's features are scalable.

Limitations: AOMS Fit can only create orthosis shells without heel post currently.

Requirements: AOMS Fit is a Windows program. Windows 7 or higher is required.

Input and output files: Input file is Sharp Shape's RAW file. Output file is common OBJ file.

Sharp Shape introduced our first 3D printing software, AOMS 3DPRN, several years ago. After that, we heard some feedback. Some users feel that the AOMS 3DPRN software is too complex and time consuming. They need something like the AOMS mold system. On the other hand, before the AOMS 3DPRN was born, some users of the AOMS mold system asked us for more controllability, like adding more control points on the curves. Simplicity and controllability are two desirable but conflicting features. AOMS Fit was designed to balance these two features. A screenshot of the AOMS Fit is shown below.



We understand there are trade-offs for simplicity and controllability. To balance them in a single program, we try to make the AOMS Fit's functions selectable and scalable. If the user wants more simplicity, he/she can select the simplicity route and leave most of the control points untouched. If the user wants more controllability, he/she can select the controllability route and adjust more control points.

We have another achievement in this program. It has been a long wish for us to fulfill a void in our product line. The void is the ability to make the so called 'As-is' or 'Wash' cast correction. What is that? It was a special cast correction work in the plaster era. It means: making a foot orthosis without adding any plaster expansions on positive foot mold. Some labs call it 'Wash' because they wash the plaster mold in a water basin by hand to smooth out the mold before they form heated plastic shell on top of the washed mold.

'As-is' is a seemingly simpler task compared with making plaster expansions. However, 'As-is' presents more mathematical issues in the software. The 'As-is' type highly relies on the soundness of the 3D raw

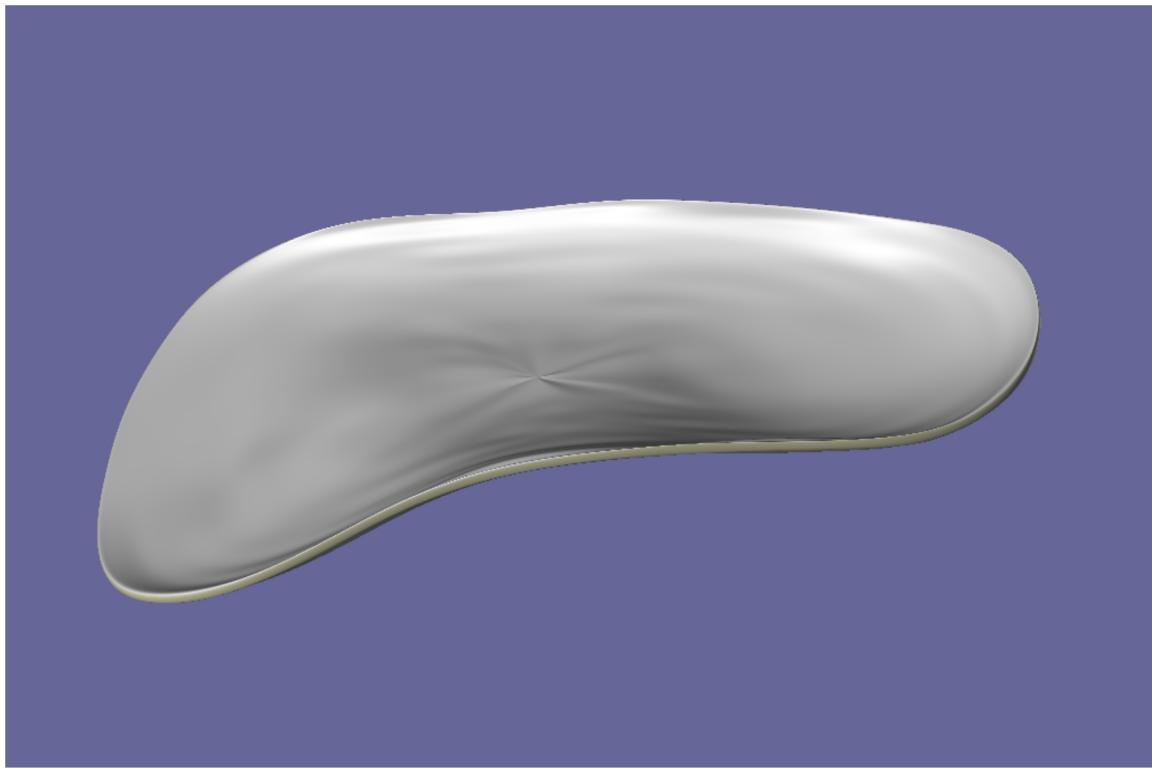
image, but the image may have noises and the surfaces are not always smooth. As result, it is hard to make a system to mill or to 3D-print a ‘As-is’ type of device. If you used our AOMS mold, or orthotic, or insole system before, you may notice that it is hard or impossible to make ‘As-is’ cast correction. You may need to spend a lot of time to achieve it.

AOMS Fit is based on ‘As-is’. In other words, AOMS Fit starts from ‘As-is’. ‘As-is’ means ‘fit’ and it leads to a tight-fitting orthosis. After the tight-fitting starts in the program, you can add uniform expansions or adjust control points if you want to.

We must say that in any case, ‘As-is’ or not, the quality of your RAW file affects the result of your final product. Better quality of the RAW file means better input to the system and better input is the basis for better output, orthosis in our case. AOMS Fit relies more on better quality of the RAW image.

Currently AOMS Fit does not create heel post in this version. We consider adding post in future. Our previous AOMS 3DPRN has the ability to add heel post. Thickness of shell is adjustable in the AOMS Fit.

The final output OBJ file contains an enclosed orthosis shell for 3D printing. The type of 3D printer and the printing materials (nylon or polypropylene, rigid or flexible) are beyond the scope of what we offer. You may consult your 3D printer supplier or out-sourcing contractor to find out whether they can take your OBJ files and make the orthoses for you. A 3D modeling of the orthotic device is shown below.



Through years of research, we are now able to provide such an innovative product. Before you are committed to the AOMS Fit, please understand the purpose of the software, limitations, requirements, and pros and cons. If you have any question, please contact us at sharpshape@comcast.net.