

CHEST DESIGNER

USER'S MANUAL

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SUMMARY :

Chest designer is dedicated to organbuilders who want to design, control and built directly their chests. Only pipe dimensions are needed as inputs. Chest designer outputs provides .DXF files which can control automated drilling machine tools, easily affordable with "service bureau" companies.

Chest Designer can display chests and whole organs in 3D.

All kind of chests can be designed : tracker chests, diatonic, chromatic, mixtures, and so on.

For unit chests, chest designer provides pallet magnet sizes and number per size. Hole diameter security can be defined by the organbuilder.

Moreover, pipe dimensions can be given pipe by pipe or by octave.

The most simple way for the beginners is to start from examples, which are given on the web, or I can give you free of charge. (The executable file is also free of charge).

Only the DXF output is given upon request, but otherwise you can use the software as you want : Enter new organ files, any number of pipes and divisions, any number of view, 3D or 2D.

Don't try to create a definition file from scratch : Because as for writing HTML language, any error can create software crashes. Don't hesitate to write me here :

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CHEST FILE FORMAT :

Chest format Keywords : Dimensions are given in millimeters.(could be changed if necessary)
ENGLISH

UTenUT : allows octave pipe dimensions definition.

CENTRAL HOLE : Hole position for a pilot supporting the middle of the chest.

STOP : Defines a new register on the chest.

DIATONIC : for diatonic or chromatic stops. Followed by the total stop length.

SLIDER : 1 register slider; 2 : Master register slider (all other register stops will be aligned on this one).

NPIPES : Number of pipes of the above stop

PIPE1 : defines the first pipe number

INCX : defines the increment of the stop : diatonic or chromatic : if INCX is negative, pipes are computed from right to left left to right otherwise.

SHAPE: (don't forget the ':' character) Pipe shape : SQUARE or ROUND

XY0 : X and Y position of the first pipe of the stop.

Then follows the successive dimensions ; (millimeters)

PIPE DIAMETER

HOLE DIAMETER (diameter of the hole under each pipe).

False chest diameter : pipe diameter at 12cm from the chest (can be changed)

HEIGHTS : Pipe heights

STOP : next register and so on.

NOTA 1: CHEST DESIGNER can also compute MIXTUR chests. :

Write the keyword "MIXTUR" before the "STOP" keyboard. Next "MIXTUR" and "STOP" keywords define the different mixture ranks.

NOTA 2 : Pipe dimensions can also be given octave by octave, or pipe by pipe.

CONTROLS :

FILE

New : open a void chest

Open Chest : Opens a chest file (.dat).

Add Chest : add a previously defined chest. Enter the X Y Z positions of the added chest. These positions can be changed by using the control : Display/Display Chests.

Open Organ : .ORG FILES : opens an organ, defined by several chest files. Org files can be made of chests and air pipes.

Save : Saves a full organ, with all his windchests and their spatial X Y Z positions with the current name..

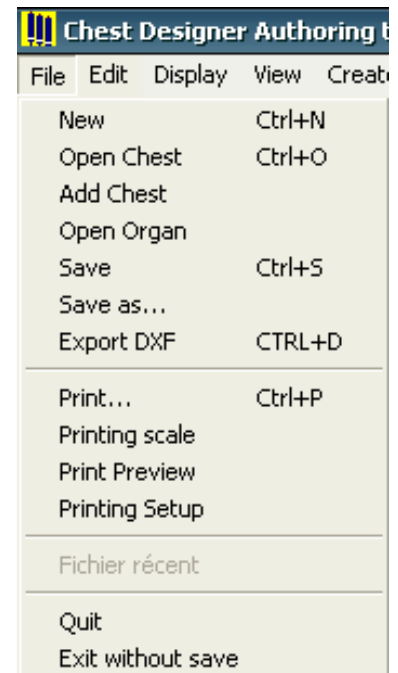
Save as : Saves a full organ with another name.

Export DXF : export a chest with his current name : given an XXX.dat file, creates XXX.som file for the upper part of the chest, XXX.fs for the file chest file and XXX.mix file for a possibly mixture stop.

Not available on the free version. Please send your .dat file, and I'll return a .dxf file.

Print

Printing Scale



EDIT :

Undo : not implemented yet.

Edit Pipe positions : Allows user to change pipe position by entering new **coordinates**.

Font

Font sizes

Register Windchest : Align all the pipes on the master stop, defined by the SLIDER keyword

DISPLAY :

Toolbar : displays toolbar

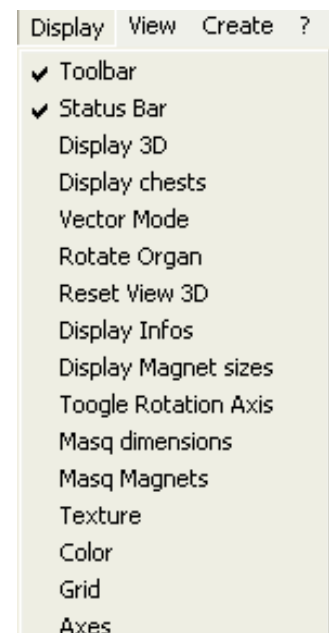
Status Bar : displays status bar.

Display 3D : displays the chest in a 3D representation.

Display chests : Displays chests positions; Allows editable XYZ spatial positions.

Vector mode : displays the chest only with lines.

Reset view 3D : resets initial chest position.



Rotate Organ : animates the full organ. Can be stopped by a left click.
Display infos : Displays magnet sizes, magnet number by size.
Display magnet sizes : displays or undisplay magnet sizes.
Toogle rotation axis : allows rotations around another rotation axis.
Masq dimensions : undisplay dimensions on the screen.
Mask Magnets : for slider chests.
Texture : allows tin texture changes. Textures are given as .bmp files or .jpg files
Color :changes background color
Grid : displays a grid on the screen (10 cm)
Axes : displays organ and chest axes

CREATE :

Bar : creates a bar (under development)

OUTPUTS FORMATS :

CHEST DESIGNER generates the following files, if "*" is the windchest name :

- *_fs.DXF FILE : is a DXF file for the false chest board. Can control directly an automated drilling machine.
- *_som.DXF FILE : is a DXF file for the upper chest board.
- *_mix.dxf for mixture windchests
- *_commande.wri : contains the wood parts dimensions in millimeters for the whole chest.

UTenUT : Definition :

This control keyword can be inserted just after the "ENGLISH" keyword. It allows user to define pipe dimensions only by octave. Input process is 12 times faster and easier than pipe by pipe definition.

Followed by all above keywords. After, dimensions are given by

Pipe Diameter False chest diameter Hole diameter Pipe Height

One line corresponds to 12 pipes. But one must add a line more, for last pipes interpolation.

Chest Designer interpolates automatically pipe dimensions, following a given temperament.


Temperament table [12]=

{1.0535,1.1174,1.18518,1.25283,1.33333,1.40466,1.49493,1.58025,1.67044,1.77778,1.87924}

And used formula : let j beeing the note :

$D1 - ((D1 - D2) * (2 - ((1 / \text{tab_temp}[j]) * 2))))$

TOOLBAR : Symbols Definition :

- : Decelerate the rotation speed.
- : Accelerate the rotation speed.
- : Decelerate the translation speed.
- : Accelerate the translation speed
-  : Toogle rotation axis

TEXTURE FILES :

Basically, Chest Designer need 2 texture files :
tin.jpg for tin pipes
And
wood.jpg for wood pipes
Be carefull : these names are case-sensitive.

PIPE DESIGNER :

You can design your own pipes and keyboards.

Open : "open Pipes"

You can create text files with pipe definition such as :

File : pipe.pipes

```
PIPENUMBER 3  
10 1000 130 120 50  
10 900 120 110 47  
10 850 100 100 46
```

In this example :

10: thickness

1000 : length

130 : width

120 : depth

80 : lowerlip
