

TurboCAD Pro V17.2 – Retro Fridge

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Special Note

All of the work presented within this tutorial is based on TurboCAD Pro V17.2. Although users of previous versions are welcome to try the tutorial it cannot be stated what results will be achieved. Many changes, some subtle and others not so subtle, are made with each program revision. Although many steps and directions would be generic some may not be. The same can be said for tools between versions. Older versions may not have the same tools as Pro V17.2 and if the same tools are available the tools themselves may have been revised and hence, work in a different manner than they previously did.

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Introduction

While cruising the Internet for tutorial inspiration I came across Big Chill (<http://bigchillfridge.com/site/>) and what I thought was a very cool set of retro style kitchen appliances. I decided that the fridge would make a great tutorial so I dived right in and this tutorial is the result. Although the real world fridge boasts a modern interior, it has been simplified within the tutorial to keep with the overall retro feeling. I have also taken additional artistic liberties as will be seen if one compares the Big Chill product with what is created within the tutorial.

I hope that you enjoy working your way through the tutorial.

Best regards,
Don

Within the tutorial the reader will be led through each keystroke to produce all components of the fridge that is illustrated on the cover of the tutorial. Aside from learning how to draw in TurboCAD, the user will learn how to insert standard lighting and how to utilize render scene luminance. The reader will learn how to establish a render scene environment and the reader will learn how to render their drawing and save it in a high resolution image format. Two views are created, one illustrating the closed fridge and one illustrating the opened fridge.

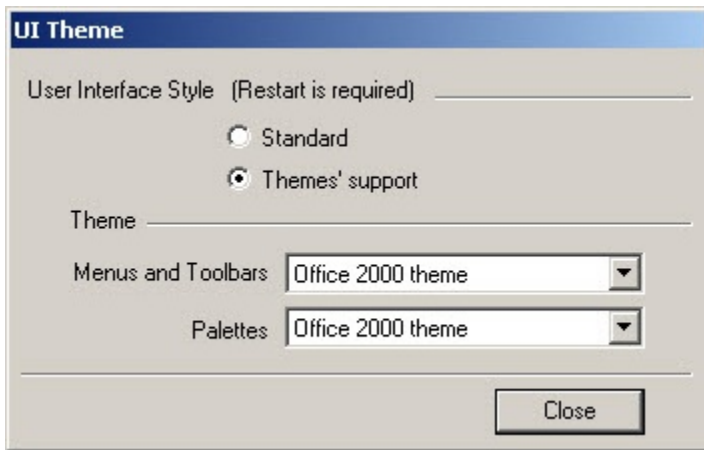
This tutorial is in no way intended to teach the fundamentals of product design or construction but rather it is intended to teach the use of some of the tools that TurboCAD has to offer and to introduce the new user to a drawing methodology. The author feels confident that the techniques outlined within the tutorial can help lay the foundation for future successful TurboCAD drawing and illustration for even the newest user.

As with any technically advanced software, the user is generally faced with a steep learning curve. It is the hope of the author that the money and time spent working through a Textual Creations tutorial will help ease the learning and allow the reader to come away feeling confident that they made a wise decision.

This tutorial will assume that the reader has the Platinum edition of TurboCAD Pro V17.2 with its extra architectural and mechanical tools although no Platinum specific tools are used, that the author is aware of.

There are many ways to approach a project and it is likely that each person using the program would proceed in very different ways, so be open to alternative methods as experience builds. What is important is that the user becomes familiar with the objects that they wish to model and begin to look at them in a different way than they might otherwise do. What primitive shapes make up the whole? What will be required of these primitive shapes early in the drawing and how will this affect needs further along? What component or components should be started with? Many questions can only be answered through experience, but hopefully some of them will be answered by the time the beginner has worked through this tutorial. There is a great deal covered in this tutorial and the author urges the beginner to be patient, to read very carefully and to take the time necessary to do a good job. Try to enjoy the process as much as you will enjoy the final results.

This tutorial assumes that the beginner has studied the desktop to some degree and can locate most of the tools. Since there are endless desktop configurations that can be set up in TurboCAD the author has opted to illustrate the required tools with the Office 2000 user interface, and the default toolbars in their undocked format (Office 2000 theme).



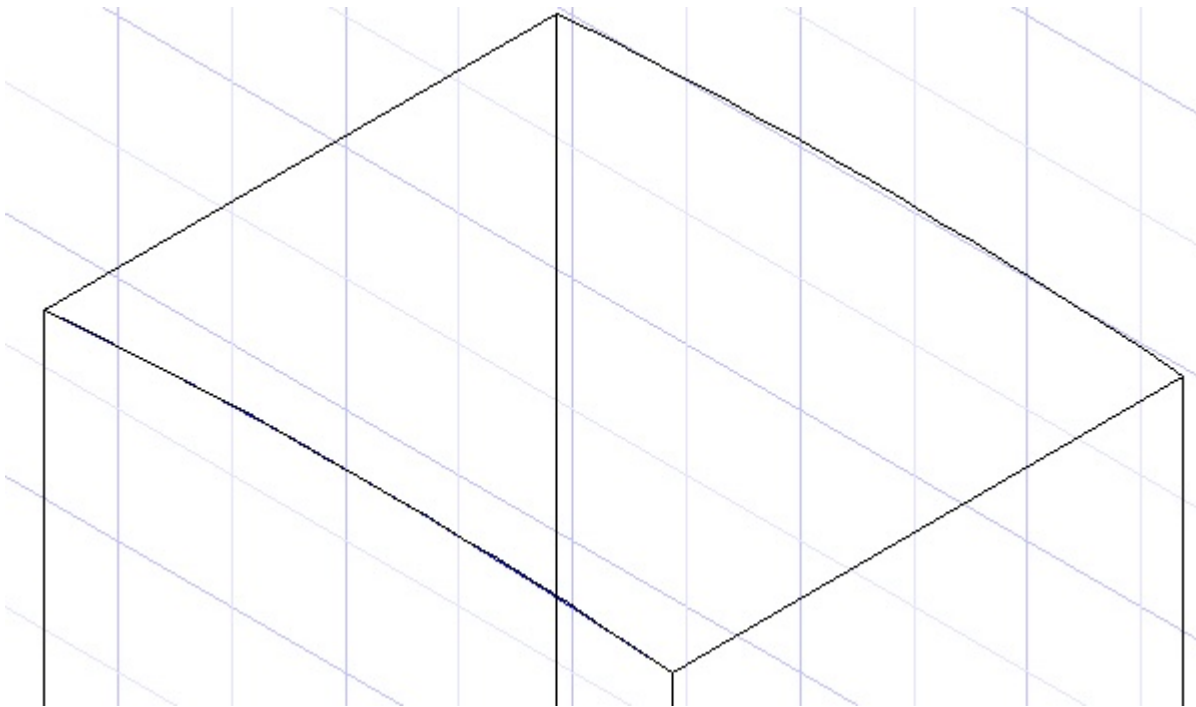
Please remember that any supplied images and files are for use within the tutorial only and may not be shared or sold to others.

Place tutorial images in a permanent location on the hard drive.

An HDR image is used within the tutorial and has been supplied. This was a free offering from someone on the internet that the author downloaded long ago. A search could not relocate it, so credit cannot be given to the creator.

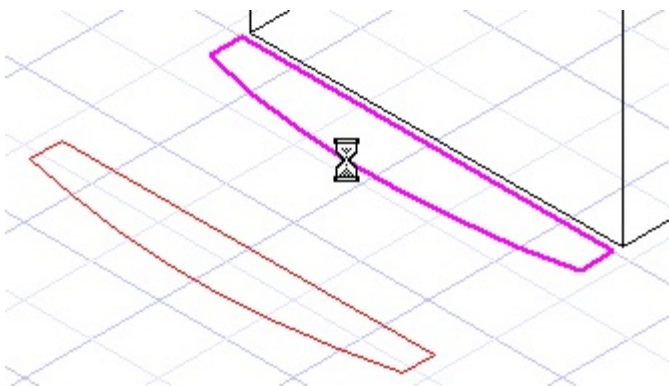
A specific font (Chaney Thin Bold) is used to create the name plate within the tutorial. Not knowing if it was a standard Windows font, it has been supplied if the reader wishes to be consistent with the tutorial. It should be installed in the Windows Font folder while TurboCAD is shut down, so it will load and be available when TurboCAD is started.

Much better.

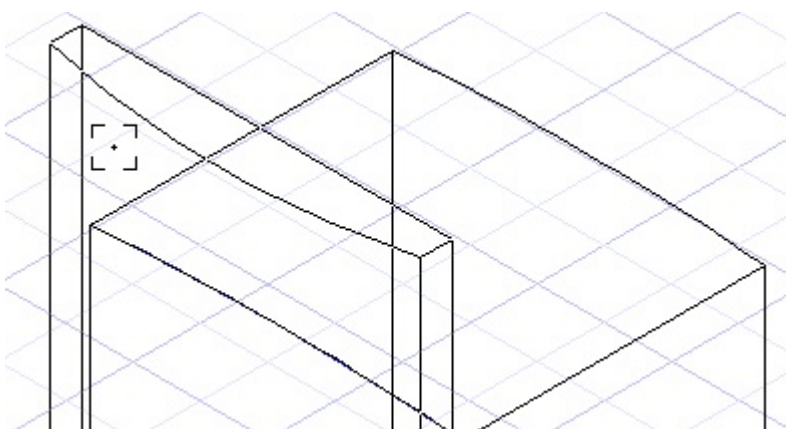


The Simple Extrude tool should still be engaged.

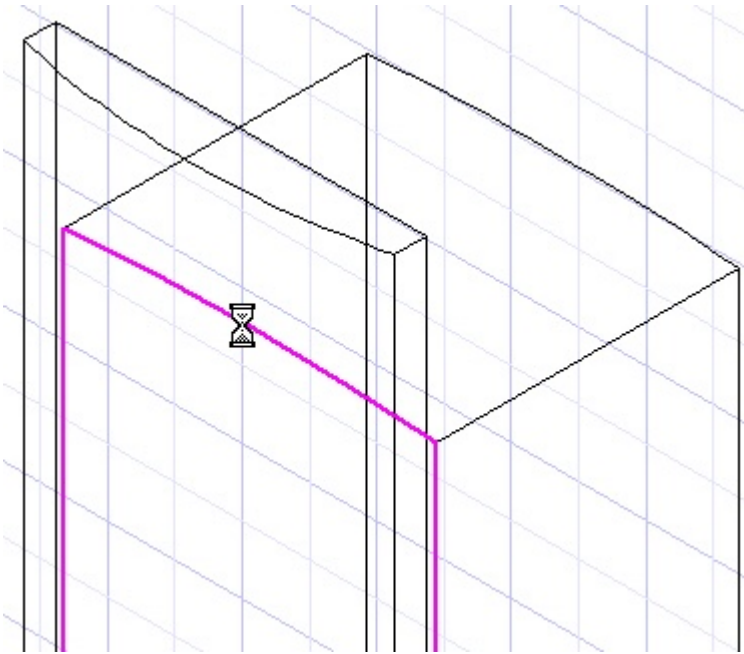
Select the red profile nearer the fridge box as the object to extrude.



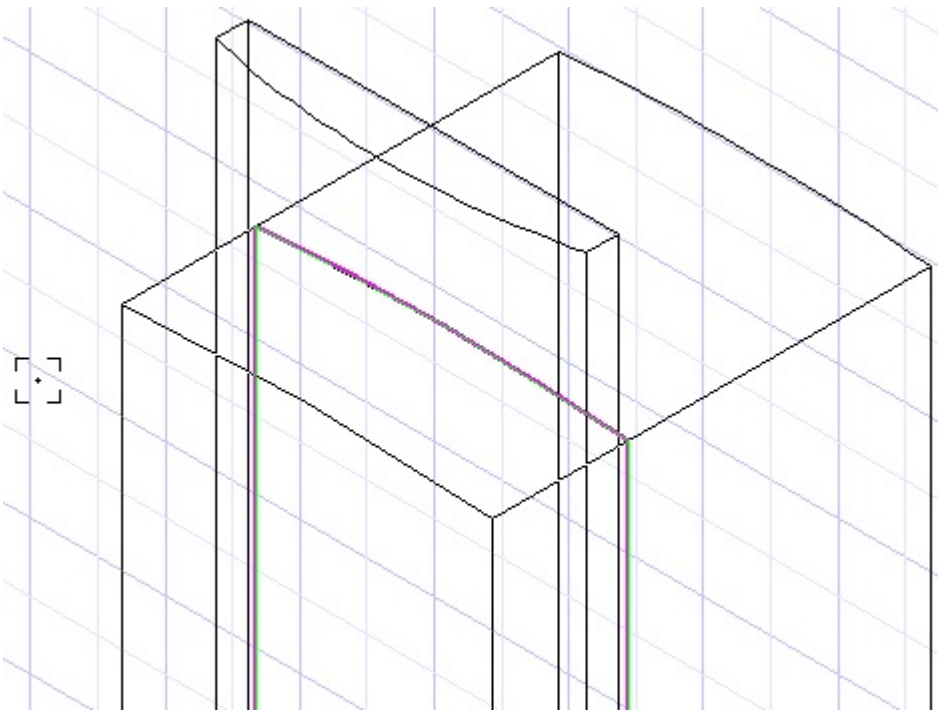
Move the cursor upward and left mouse click when the extrusion clears the top of the fridge. In progress below.



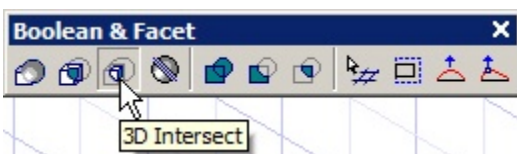
Select the blue profile again as the next object to extrude.



Move the cursor outward and left mouse click when the extrusion clears the outside of the fridge door. In progress below.



To help create the 3D door shape, select the 3D Intersect tool from the Boolean & Facet toolbar.



Select the two forward extrusions as the objects to intersect. In progress below.



Select the blue profile as the object to extrude. Tab into the Inspector Bar and enter $1/8$ in the Height field. Press Enter to extrude $1/8$ inch in each direction.

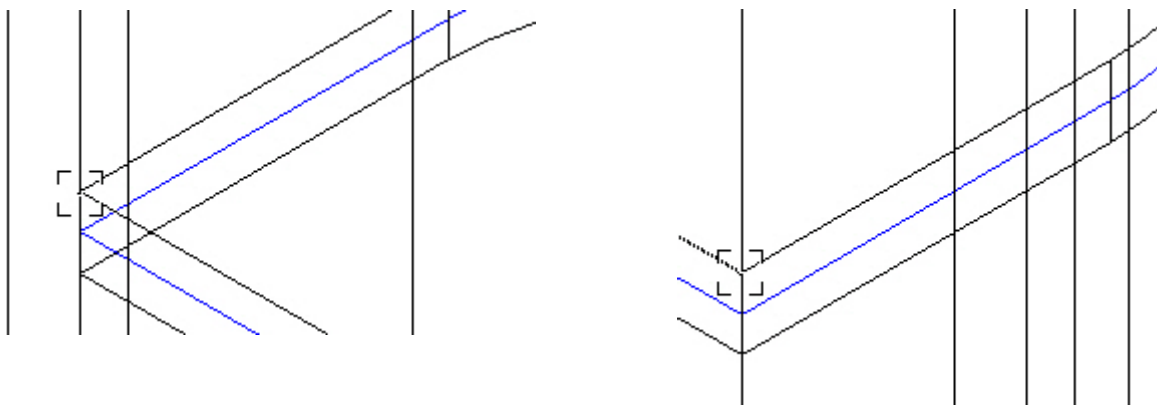


Disengage the Auto Workplane by Face from the Workplane toolbar.

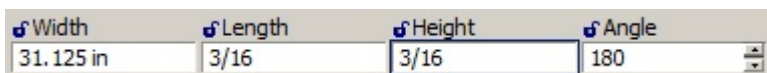
To create the shelf rails, select the Rotated Box tool from the 3D Object toolbar.



Using two V SEKE snaps, place the first two points of the box on the upper outside corners of the shelf, as indicated in the picture below.



Tab into the Inspector Bar and enter $3/16$ in the Length and Height fields. Press Enter.



Press the Space Bar to exit the tool.

Select the square rod. Tab into the Inspector Bar and enter 1.5 in the Delta Z field. Press Enter.



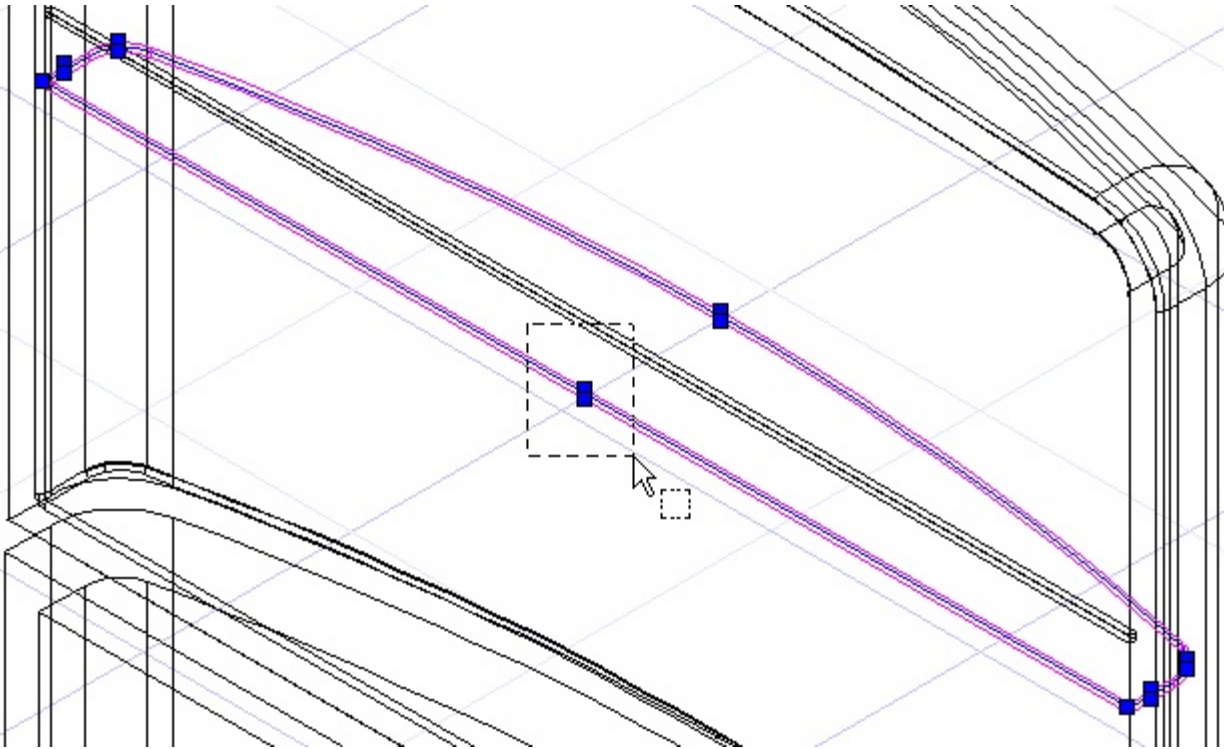
Select the Fillet Edges tool from the 3D Modify toolbar.

Tab into the Inspector Bar and enter $1/16$ in the Start Radius field. Press Enter.



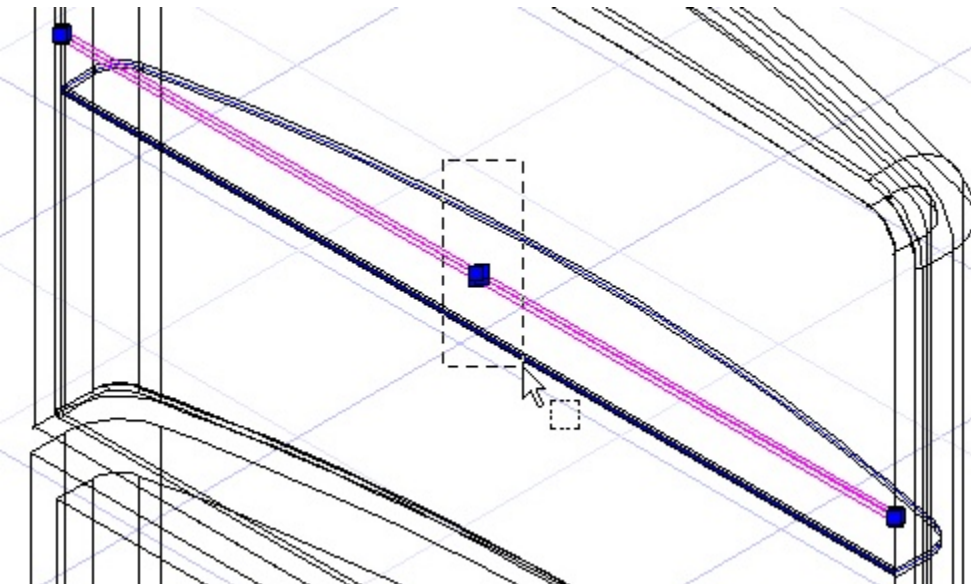
Select the shelf as the object to fillet.

Drag the cursor around the two nodes, as indicated in the picture below, as the edges to fillet. In progress below.



Select Finish.

Select the square rod as the object to fillet. Drag the cursor around the four nodes, as indicated in the picture below, as the edges to fillet. Select Finish. In progress below.

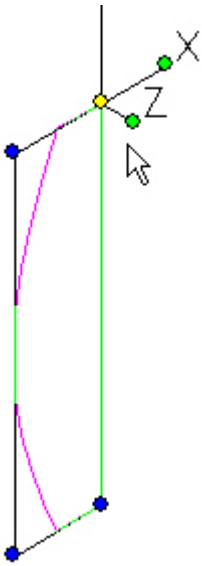


Press the Space Bar to exit the tool.

Select the square rod.

Select the Linear Copy tool from the Copy toolbar.

Press D SEKE and relocate (V SEKE) the reference point to the upper right corner.

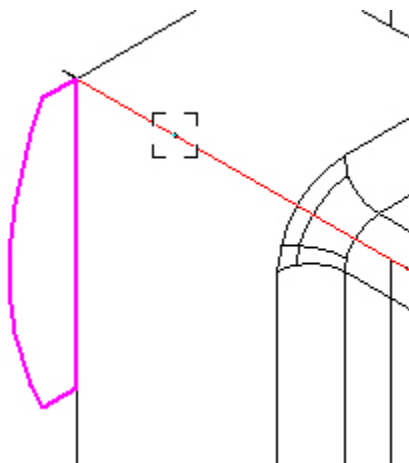


Left mouse click on the reference point of the selection to pick it up. Move the cursor to the first point of the red path and V SEKE snap the selection in place.

Select the Sweep tool from the 3D Object toolbar.



Select the blue profile as the entity to sweep and then select the red polyline as the path. In progress below.

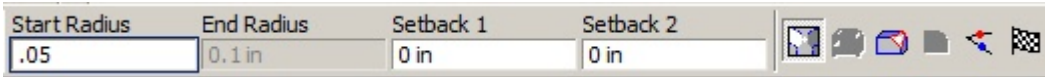


Press Ctrl + K to open the Select by Colors dialogue. Select Blue and Red and then click OK.

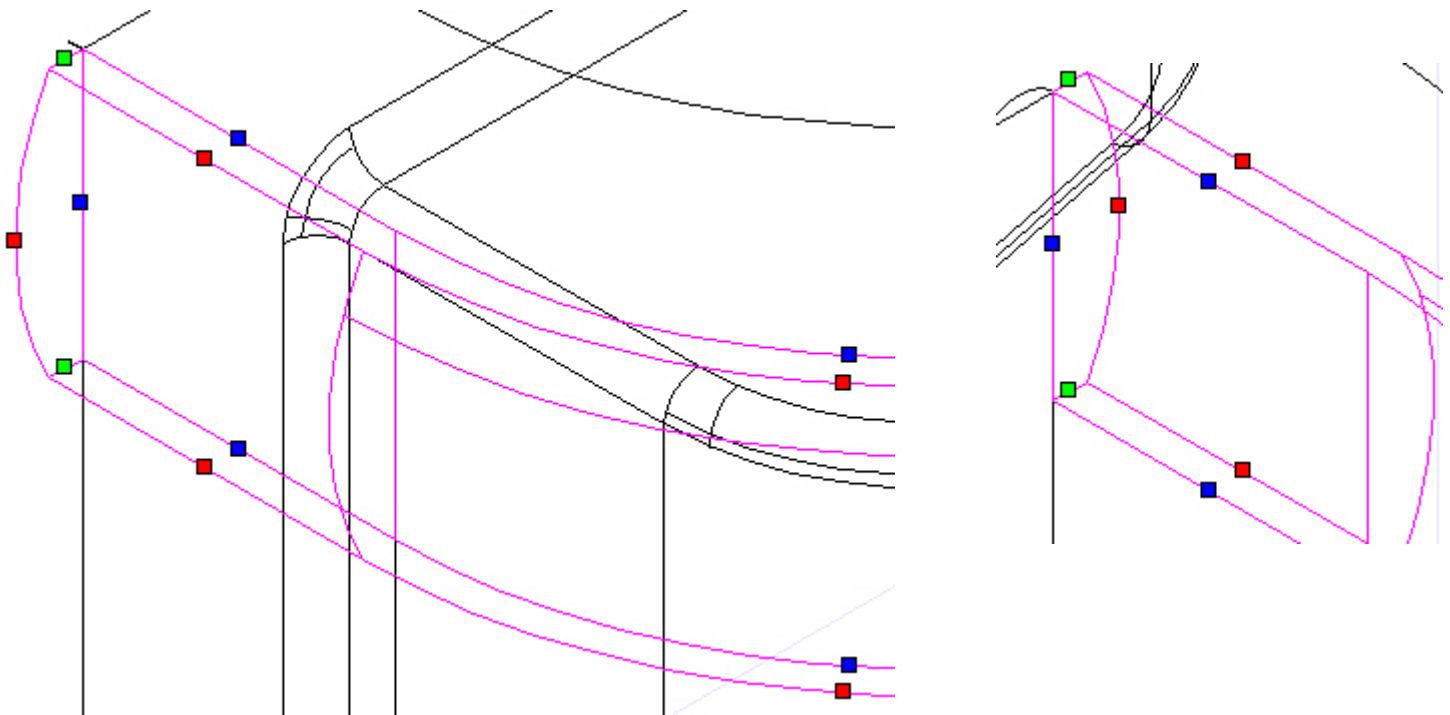
Assign the selection to the 2D layer.

Select the Fillet Edges tool from the 3D Modify toolbar.

Tab into the Inspector Bar and enter .05 in the Start Radius field. Press Enter.



Select the moulding as the object to fillet. Select the outside lines as the edges to fillet. Spilt image below.



Select Finish.

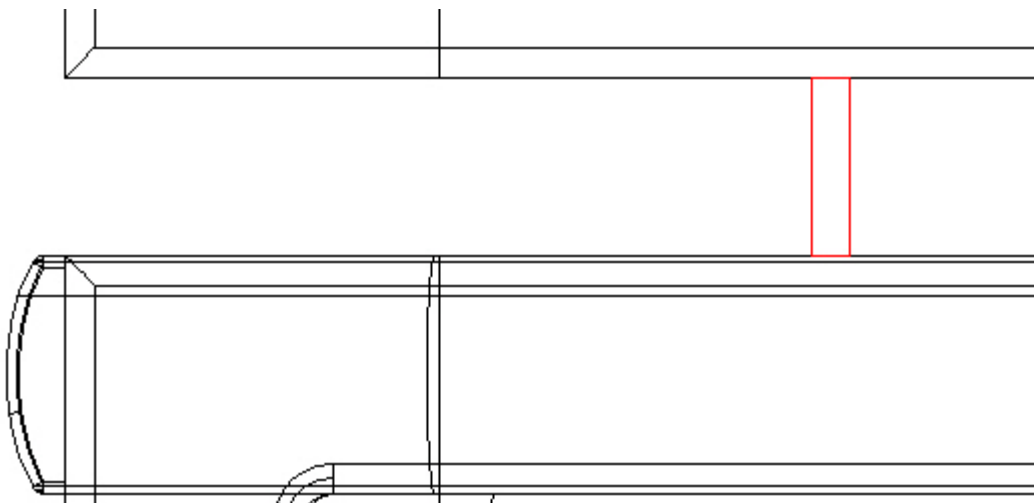
Press the Space Bar to exit the tool.

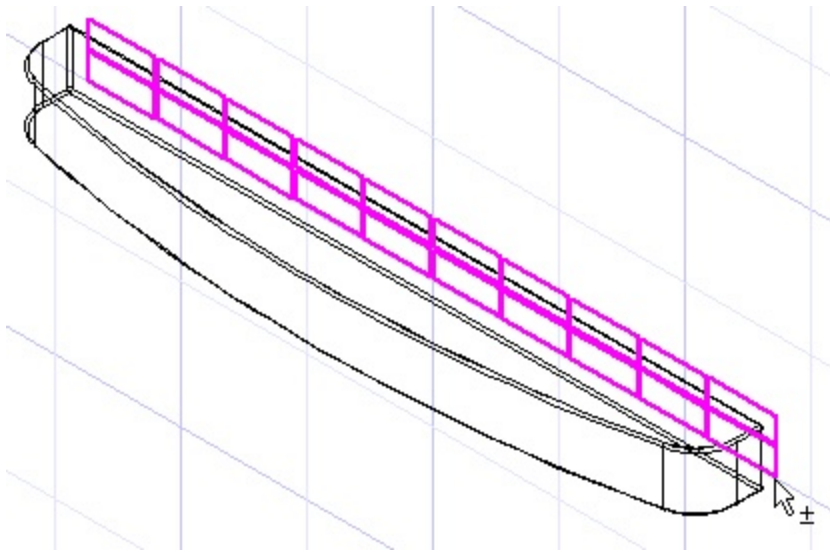
Switch to Front view.

Select Plane by Active View from the Workplane toolbar.

Select the Rectangle tool from the Line toolbar.

Using two N SEKE snaps place a rectangle between the lower edge of the freezer door and the upper edge of the fridge door. Width is not critical.

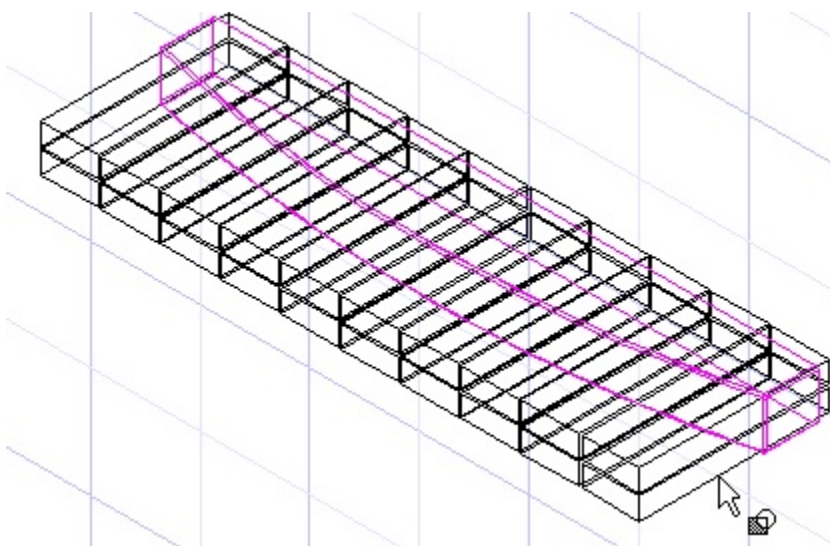




Move the cursor to the left and left mouse click when the extrusion passes beyond the front of the grill.

Select the 3D Subtract tool from the Boolean & Facet toolbar.

Select the grill as the object to subtract from and then select the extrusion as the object to subtract. In progress below.



Press Ctrl + K to open the Select by Colors dialogue. Select Red and click OK.

Assign the selection to the 2D layer.

Turn off the Lower Grill layer and turn on the Main Box layer.

Leg Levelers & Rollers

Some simple leg levelers and rollers will now be created.

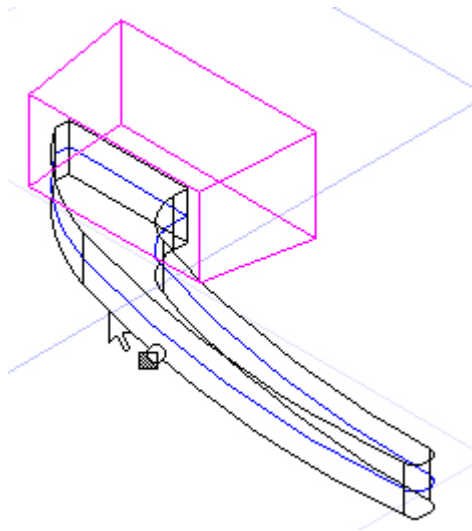
Switch to Left view.

Select Plane by Active View from the Workplane toolbar.

Select the 3D Subtract tool from the Boolean & Facet toolbar.

Select the Don't remove the subtrahend option.

Select the block as the object to subtract from and then select the handle as the object to subtract. In progress below.



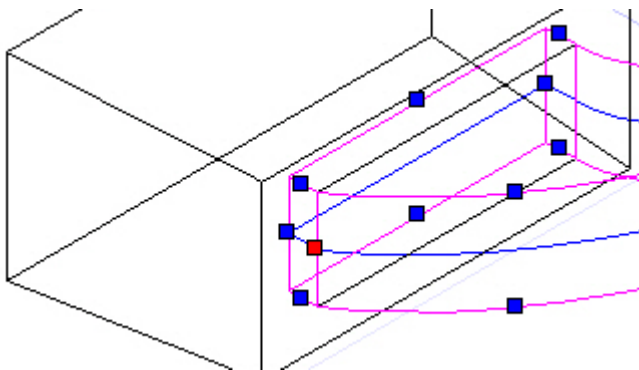
Select the Fillet Edges tool from the 3D Modify toolbar.

Tab into the Inspector Bar and enter .75 in the Start Radius field. Press Enter.



Switch to Isometric SW view.

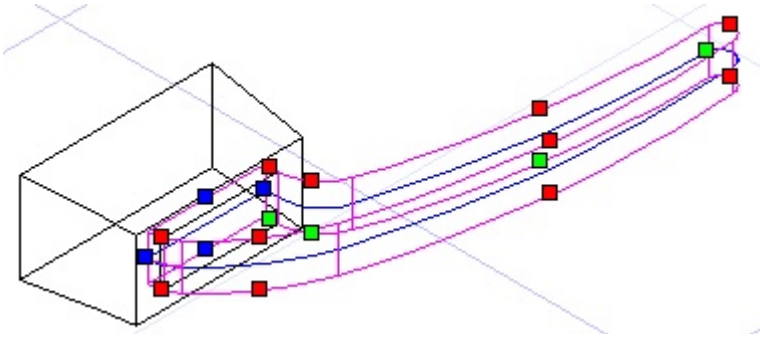
Select the handle as the object to fillet. Select the single line, as indicated in the picture below, as the edges to fillet. Select Finish. In progress below.



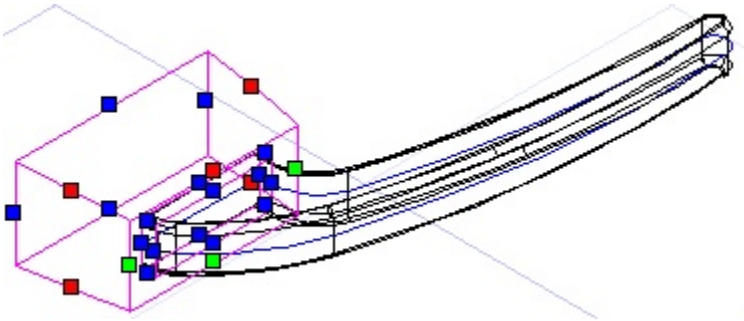
Tab into the Inspector Bar and enter 1/8 in the Start Radius field. Press Enter.



Select the handle as the object to fillet. Select all but the flat inside facet lines, as indicated in the picture below, as the edges to fillet. Select Finish. In progress below.



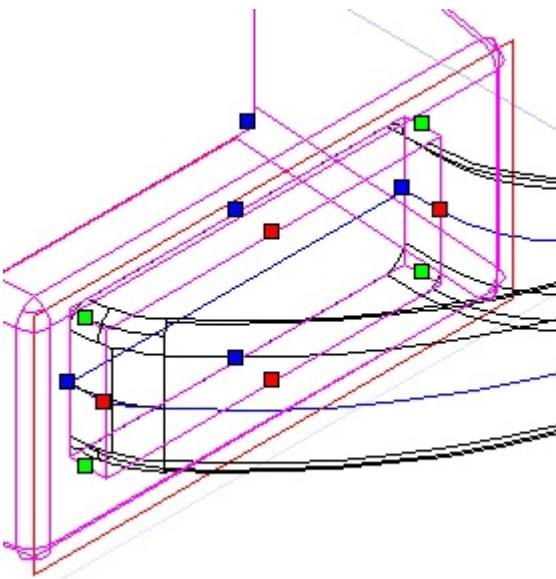
Select the block as the object to fillet. Select the four side lines and one forward outside line, as indicated in the picture below, as the edges to fillet. Select Finish. In progress below.



Tab into the Inspector Bar and enter 1/32 in the Start Radius field. Press Enter.



Select the block as the object to fillet. Select the four forward outside lines of the hole, as indicated in the picture below, as the edges to fillet. Select Finish. In progress below.



Press the Space Bar to exit the tool.

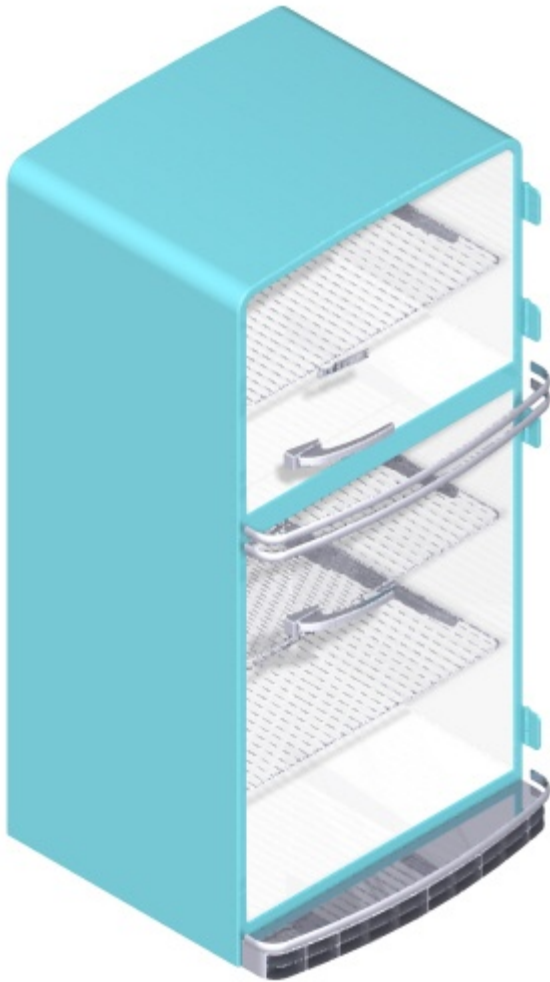
Select the latch and the profiles.

Tab into the Inspector Bar and enter 52.25 in the Z Position field. Press Enter. Do not deselect.

Turn on the Main Box layer.

Switch to Isometric SW view.

Select the Quality Rendering tool on the Render toolbar and allow the time for the screen to render.



Select the Wireframe icon from the Render toolbar to end the render.

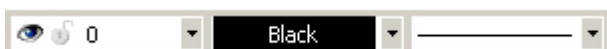
Turn on all layers, except 2D, and then turn off the Shelves layer.

Ground Plane

A simple ground plane will now be created. It will have a shadow catcher material applied that will help enhance the final render.

Select the Circle Center and Point tool from the Circle/Ellipse toolbar.

Select Black from the color dropdown menu on the Property toolbar.



Select Plane by World from the Workplane toolbar.

Turn on the Shelves and Ground Plane layers.

Select the Quality Rendering tool on the Render toolbar.

Allow time for the render to save. (58 seconds on the author's off the shelf Acer).



Saving the Rendered Image (2)

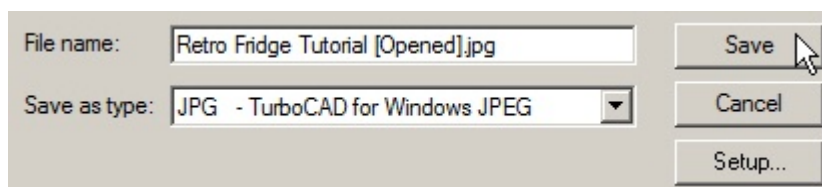
This render will now be saved.

With the desired view now fully rendered on screen select **Save As** from the File menu at the top of the TurboCAD desktop.

Under the **Save As** dialogue, select the desired **Save in** location from the dropdown menu at the top of the dialogue.

Select **JPG – TurboCAD for Windows JPEG** from the **Save as type** dropdown menu.

Enter the file name *Retro Fridge Tutorial [Opened].jpg*. Click **Save**.



Click **okay** at the format 'not supported' warning.

Allow time for the render to save. (2 minute 15 seconds on the author's off the shelf Acer).