



Custom Bucket Shapes Built from BMP Files

By Bob Glover

One of the many help calls we receive are clients asking for help building custom bucket shapes to be used with the Excavator driver. A new utility that we have been working on, which should be available after HYPACK® 2016 has been released, is the Bucket Shape design tool (BktShape.exe). This program will allow you to take Bitmap images and easily design custom bucket shapes. Cell phone pictures saved out as BMP files can be imported and in a few easy steps, and saved out as boat shapes to be loaded into the excavator.dll. The following are the steps necessary to create these custom shapes.

The Bucket Shape Design tool must be placed in the HYPACK® root folder, as it relies on supporting driver files that are already present in the HYPACK® installation.

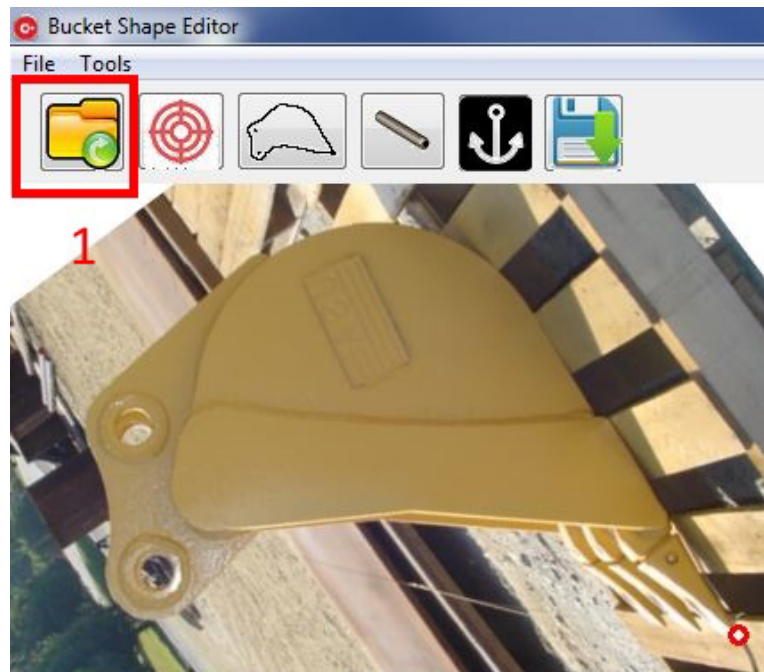
To run the utility, navigate into the HYPACK root folder and double-click on the BktShape.exe, or set it up to run through the HYPACK® Tools menu.

FIGURE 1. Bucket Shape Design Tool (BktShapeEditor.exe) in Windows® Explorer

BIDS45F.DLL	8/6/1999 4:33 AM	Application extens...	48 KB
bkgdplotter.dll	6/5/2015 3:00 PM	Application extens...	1,956 KB
BktShapeEditor.exe	12/2/2015 4:01 PM	Application	2,781 KB
boost_chrono-vc100-mt-1_49.dll	7/1/2013 6:16 PM	Application extens...	22 KB
boost_date_time-vc100-mt-1_49.dll	7/1/2013 6:16 PM	Application extens...	38 KB
boost_filesystem-vc100-mt-1_49.dll	7/1/2013 6:16 PM	Application extens...	137 KB
boost_iostreams-vc100-mt-1_49.dll	7/1/2013 6:17 PM	Application extens...	39 KB

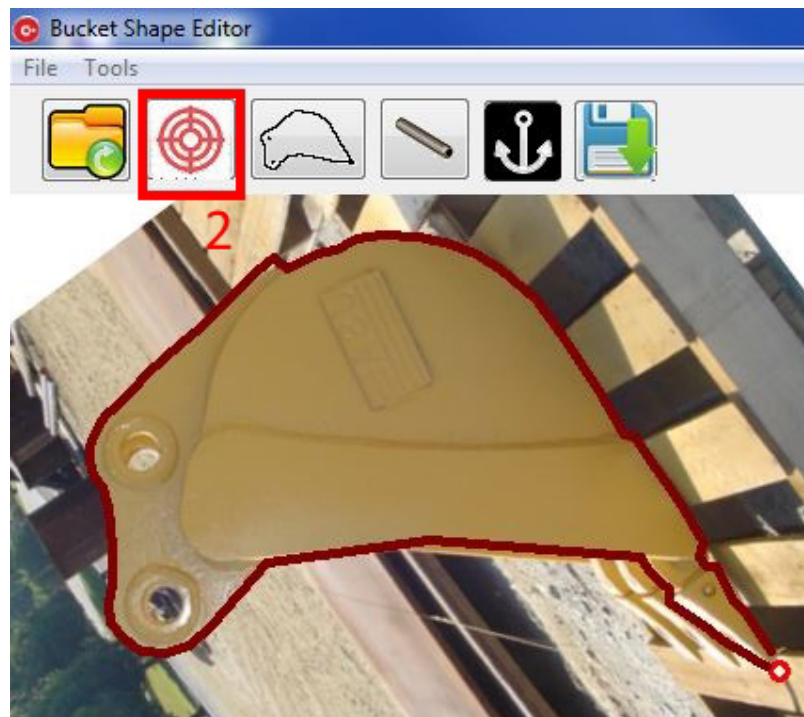
1. **Load the bitmap file into the program.** Click the File Open icon and select the BMP file. Currently, the bucket must be positioned with the bucket facing down and the teeth to the right-hand side of the image. This can be accomplished using a graphics program (ex. Paint) to rotate the image as required.

FIGURE 2. Loading the BMP to the BUCKET SHAPE EDITOR



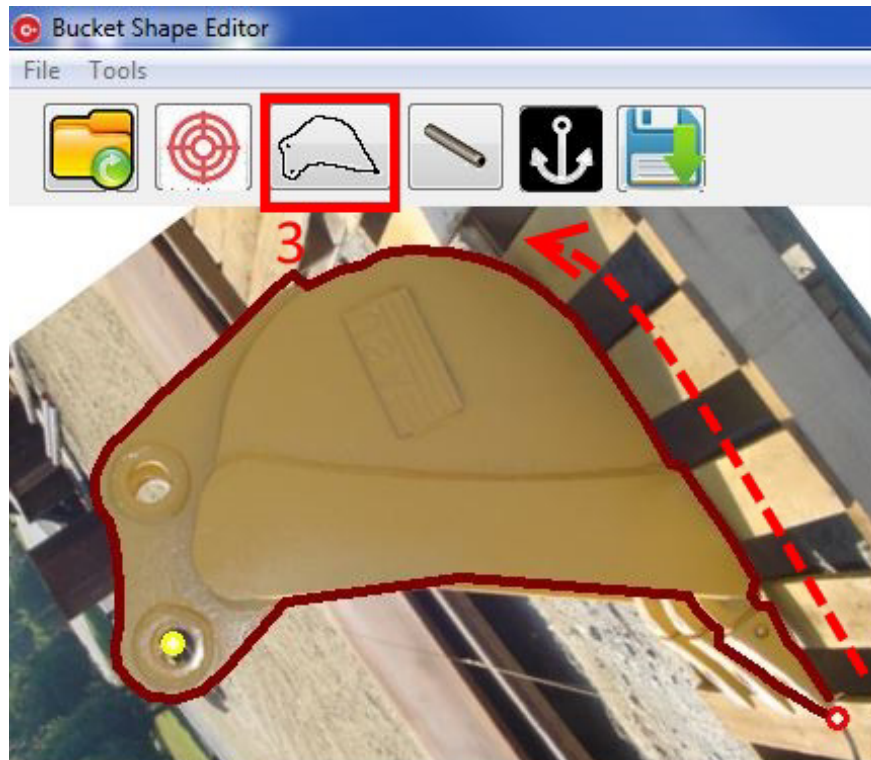
2. **Set your reference point at the outermost point of the digging teeth.** Click the Bulls Eye icon then the reference point. This is very important as the driver scales the shape between the reference point and the pin-to-stick attachment point.

FIGURE 3. Defining the Reference Point



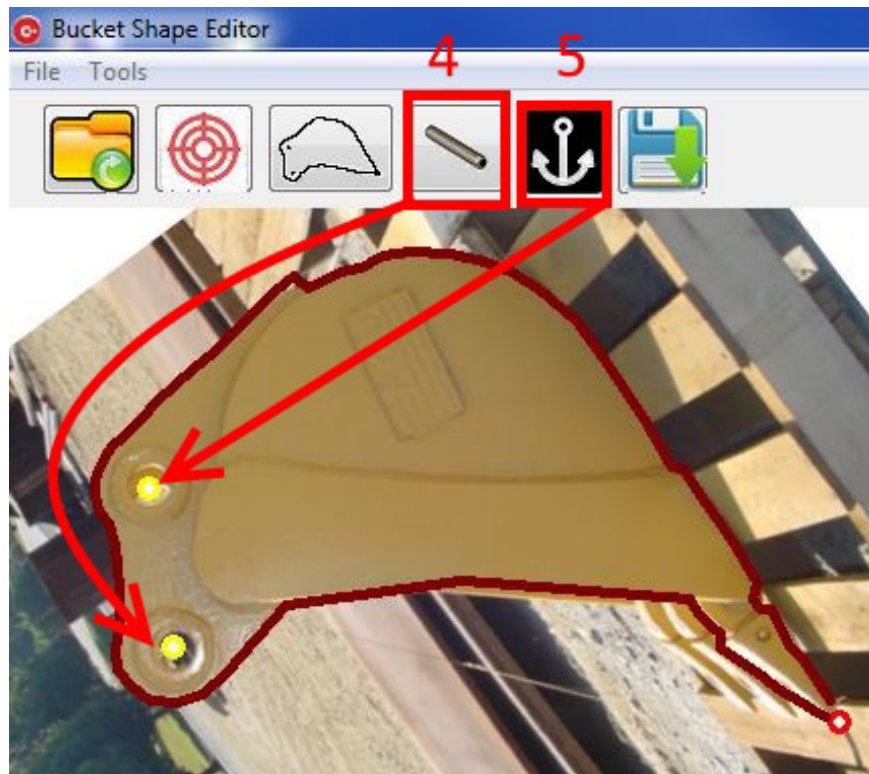
3. **Define the bucket shape.** Select the bucket shape Drawing Tool icon and click around the bucket starting at the reference point and going counter-clockwise.

FIGURE 4. *Defining the Bucket Shape*



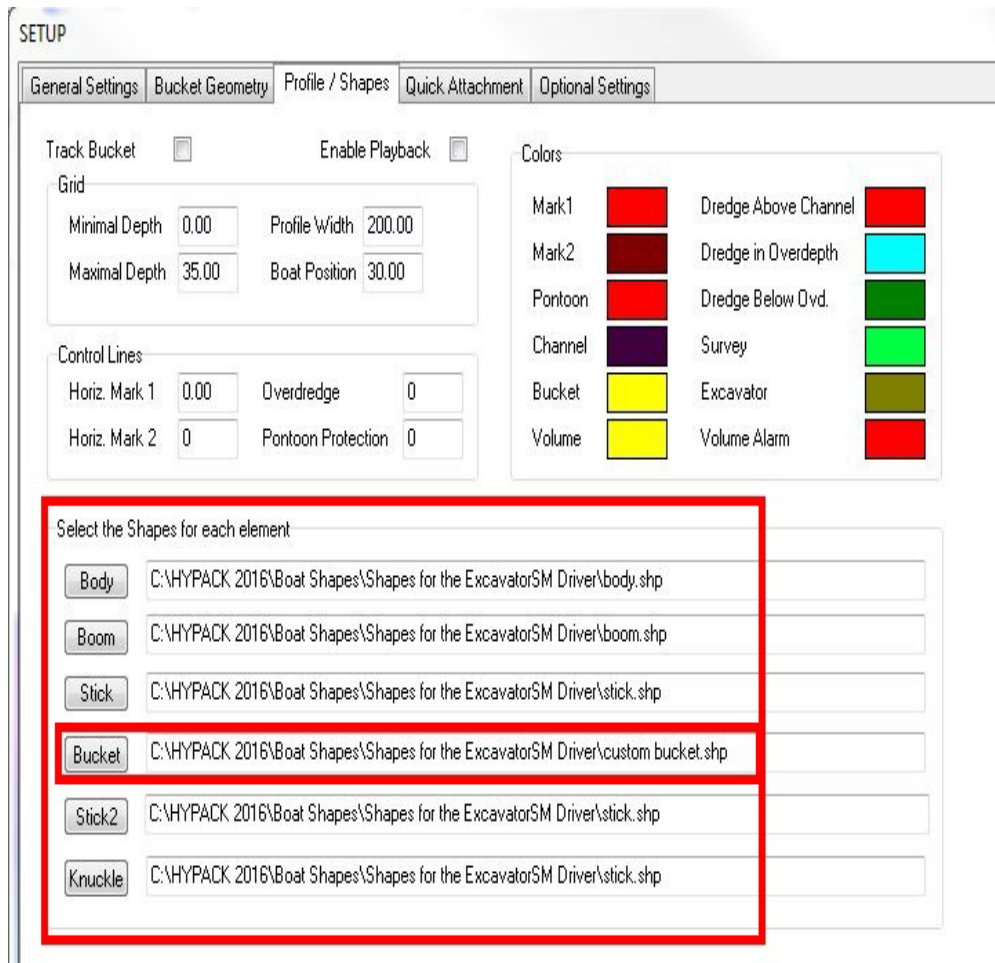
4. **Define the boom attachment pin.** Click the Pin icon then the location of the bucket-to-stick pin.
5. **Define the hydraulic anchor point.** Click the Anchor Icon, then the hydraulic anchor point.

FIGURE 5. Defining the Boom Attachment and Hydraulic Anchor Points



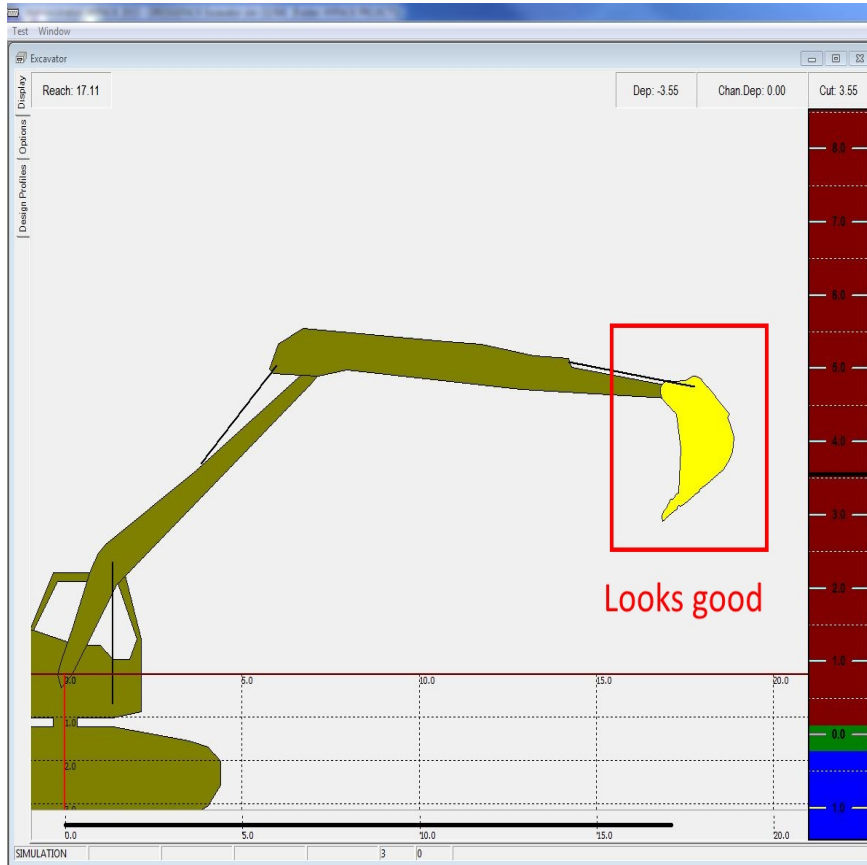
6. **Save the shape into the \HYPACK 2016\Boat Shapes\Excavator SM boat shapes folder.**
7. **In HARDWARE, add the cutter head shape to the Excavator driver configuration:**
 - a. Open the setup dialog for the Excavator driver.
 - b. In the Profiles / Shapes tab, click [Bucket] and select your new shape.

FIGURE 6. Including your Bucket Shape in your Excavator Driver Configuration



- c. **On the Survey connect tab, click [Device Test]** and check out your new custom bucket shape.

FIGURE 7. Excavator Device Test



For those interested in a copy of this new tool, we are expecting to have it tested and ready sometime in February of 2016. Please feel free to contact me at Bob@HYPACK.com for more information.