Each line is represented by two vertices. The rotation is applied to each point represented by a vector or all at once by representing all points in one matrix. The resulting matrix represents each point after the transformation.

Only linear transformations are needed for all the rotations. However, in order to do this, there must be a third dimension added since in the rotations about the x- and y-axes each frame during the first half of a rotation has a corresponding identical frame in the second half of the rotation and yet must move in different directions each time. Therefore, two dimensions is not enough to rotate a two dimensional shape along an axis in the plane, so a third dimension must be added to keep track of which part of the rotation a letter is currently in. As for each of the points, add a third dimension with all extra numbers starting at 0 except for the diagonal number which should start at 1.

The matrix for the transformation is simple. Start with the 3x3 identity matrix. Let the two axes for which the coordinates are changing be and . Set to , to , to , and to . That is the transformation matrix. This is the same matrix as the one used in Givens Rotations. The matrix will transform the point represented as a matrix by rotating it around the specified axis. When displaying the point, the z-coordinate can be ignored, projecting it onto the x-y plane.