# KOMO Pathfinder Part Registration System

The KOMO Pathfinder Part Registration System allows "print and cut" type parts to be placed in rough position on the router table and still be cut with precision. Often the edge of a work piece is inconsistent or has some varying offset and/or rotation relative to the printed pattern. This can make it impossible to use the usual edge guide or tooling pin methods to place and align the part on the router table in a repeatable way.

The KOMO Pathfinder System solves this problem through the use of a camera with vision processing to recognize reference points printed on the work piece. These reference points are then used to calculate the offset and rotation on the fly for each part. To allow the offset and rotation to be calculated, the part is printed with reference points, which are typically solid black dots.
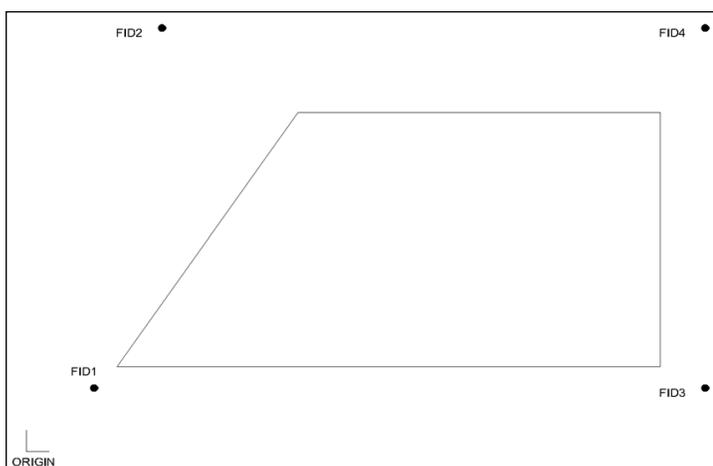
*A sample part with four printed reference points*
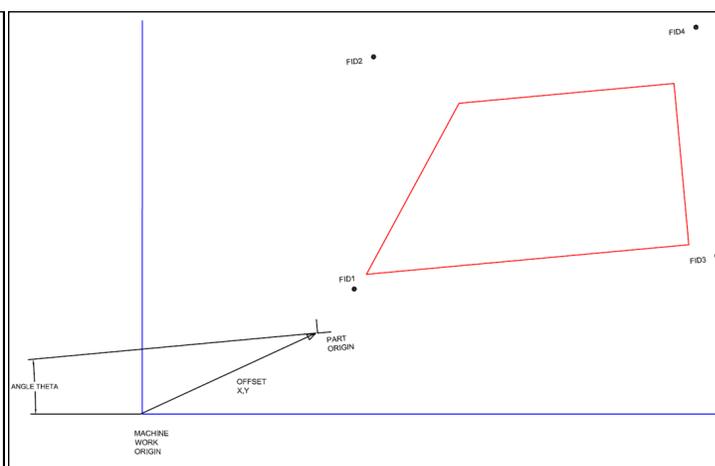
The part may be placed with random angle and offsets

The camera, which is attached to the Z plate, will rapid traverse to each reference mark, briefly pause, acquire an image and determine the location of the mark. This process typically takes less than 500ms to complete per mark, excluding traverse time. The Pathfinder System will then calculate the offset and rotation of the part and apply the needed corrections to the cut – all without needing to change any programs, or manually acquire work offsets. The rotation and offset can vary from part to part and will be corrected automatically without the need for operator intervention.

Imperfectly placed part, with registration marks
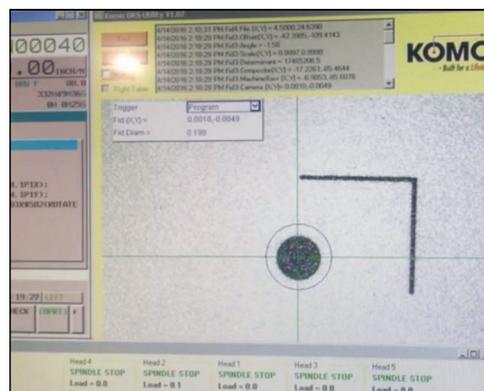
Picture of a typical registration mark