**R1-TOUCH with 3D SHIFT functionality**

**Overview:**  Multiple searches are required to discover part location and orientation of large weldments in the mining/agriculture industries.  These searches require complex calculations to combine into a coherent shift amount – a shift amount that contains both X, Y, and Z shift amount but also orientation and center-of-rotation data.  For this macro job, up to four (4) searches can be deployed with the end goal of creating a 3D SHIFT amount that can correct for both changing location and changing orientation of the weldment.

The 1st search is deployed/programmed with traditional means.

After the 2nd, 3rd, and 4th touches, a 3D SHIFT (i.e., non - “parallel” shift amount) amount is calculated and deployed (for subsequent touches). 3D SHIFT amounts allow for, among other things, different XYZ shift amounts depending on where you are on the weld line(s).  So, for example, if you have a series of stitch welds around the perimeter of a block, only 2 or 3 touches are required to shift all the welds accurately (instead of touching every single weld individually, traditionally).

With this new macro job, it is possible, but not recommended, to use both 1touch and 2touch modes for a combined 3D SHIFT amount.  One could mix them for a given surface (i.e., surface 1 could use 1touches, while surface 2 could use 2touches), but it’s easier to obtain an accurate 3D SHIFT amount if all 4 searches are 1touch, or all 4 searches are 2 touch.

Note that after the 2nd, 3rd, and 4th touches, a 3D SHIFT amount will automatically be executed, and any of these 3D SHIFT amounts can be immediately applied to the weld path (without having to execute a SFTON 3D instruction).

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