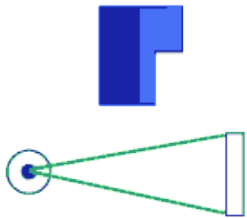


Translate/Rotate CT

Translate/rotate, as the name implies, requires the object to move through and turn within the x-ray beam during data collection. Translate/rotate CT is often referred to as “second generation CT.”

Translate/rotate scans begin with the object positioned outside the x-ray beam. When data collection starts, the object translates through the x-ray beam from left-to-right. After the object translate through the beam, the system rotates the object a few degrees and then translates it back through the beam in the opposite direction. This process continues until data are collected through a full 360° rotation or through 180° plus the fan angle of the x-ray source.



Translate/rotate scans produce extremely high-quality images because very large amounts of data are collected. Objects that are larger than the field-of-view of the detector can be scanned with this technique as long as they fit within the physical part envelope of the scanner.

The risk of ring artifacts is completely eliminated with this technique. The translation motion allows the collected data to be spread across the detector channels in a random fashion, so the effects of a strong detector element or channel is spread across the entire data set rather than being concentrated in one area.

The primary disadvantage of translate/rotate scanning is the time element required for data collection. It takes from eight to ten times longer to scan an object with this technique than it does in rotate-only mode.