Definition Of Breakaway Torque For Threaded Fasteners

Breakaway torque is the rotating force required to "break" the head loose, going in the same direction as applied - tightening. This will usually give a value HIGHER than the original tightening torque because dynamic (when the bolt was tightened) is lower than static (when you try to break loose the bolt head).

This is how it is defined by torque testing standards. If the breakaway is measured in reverse (loosening), you will usually get even higher readings because the bolt head generally "digs in" and forms small burrs and indents THAT ARE DIRECTIONAL - like a ratchet. It is incorrect to check breakaway by loosening. Keep in mind that "breakaway" occurs instantly and ANY turning beyond that point will produce furthe tightening, not breakaway, and give false high readings. Breakaway is best checked with a torque wrench/instrument designed for that purpose. It is very difficult to check breakaway manually with any accuracy.

Another definition of "Torque Breakaway" is "the point at which torque applied to the a fastener restarts he fastener in a positive(tightening) direction." The restarting movement is characterized by a momentary drop-off in torque followed by an increase in torque (as mentioned above) with further rotation in the positive direction. Checking this manually, the operator would apply torque slowly and feel for the breakaway point, RELEASING the wrench at that moment, and looking at the high limit reached on the wrench. You can see that the turn DIRECTION and technique are critical to proper testing.