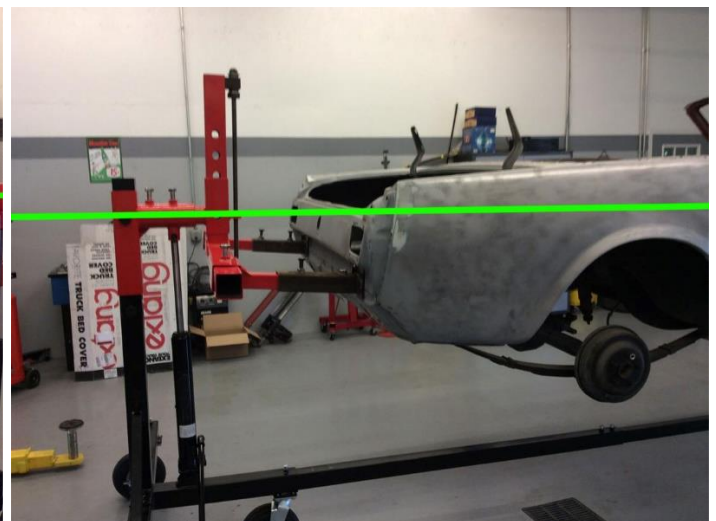




BALANCE YOUR CAR YOUR FIRST!!!

Congratulations and thank you for purchasing your rotisserie from Redline. The purpose of this document is to explain the importance of balancing your car or load on your rotisserie before attempting to spin the car. A rotisserie is made to rotate a vehicle around its center of gravity (C.O.G.). Often, customers do not balance their vehicle onto the rotisserie, causing the vehicle to be raised every 0 to 180 degrees of rotation and lowered every 181-360 degrees of rotation.

Below is an example of a poorly balanced car. Notice how the poorly balanced car exhibits very little of the car's structure above the green line? The green line represents the rotational axis of the rotisserie. Heavy items like the differential, suspension, and brakes are all below the green line, while very little of the car's structure is above the green line. This surely results in the car's C.O.G. being below the rotational axis of the rotisserie. Instead, the car's C.O.G. should be in-line with the rotisserie's rotating axis. This loading below will surely be difficult to rotate this car, because attempting to rotate it will result in not just "rotating" the car, but also "raising" the car. The rotisserie's balancing rod should be adjusted to raise the car upward so that more of the car is moved closer to the rotisserie's rotational axis. This needed change would quickly become apparent to the user because attempting to rotate the car in this state shown below would result in the car becoming more and more difficult to raise the further and further it was spun. Likewise, if the car became easier and easier to rotate, this would indicate the car is falling, at which point a balancing rod adjustment in the opposite direction should be made. Thus, if you do not know where the C.O.G. is located in your car, simply spin the car a small amount and gauge if it's getting easier or harder to turn. If it's getting harder to turn, raise the car's C.O.G. via the balancing rod. If it's getting easier to turn, lower the car's C.O.G. via the balancing rod. Be sure not to confuse the hydraulic jacks with the threaded rod that raises and lowers the car's C.O.G. The hydraulic jacks are used for raising the car in order to ensure the car clears the telescopic bar connecting each half of the rotisserie, while the threaded balancing rods raise and lower the car's C.O.G.



These two cars below represent well-balanced cars on rotisseries. It would appear that roughly an equal amount of the vehicle's structure is both above and below the green line, resulting in a car that is neither being "raised" or "lowered" during the spinning process, but is instead being "rotated" about the car's C.O.G.



Redline Engineering LLC offers two gear-drive rotisseries, the RTS3000 and our ROT3000-LD. It's important to note that these gear drives cannot handle the stress and strain of an "extremely poorly" balanced load. They are able to absorb a noticeable amount of off-center loading, but like all mechanical systems, they have their limit. Below are photos of a busted ROT3000-LD gear drive on the left, and a cracked RTS3000 gear drive on the right. The user should be aware that these types of damages are considered user-inflicted, and while very rare, they are not covered under warranty. Thus, it is of considerable importance the user properly balance their car before attempting to rotate the vehicle and remember to rebalance the car any time a substantial change to the car's C.O.G. is made, such as the adding or removal of heavy steering or suspension components.



We at Redline Engineering LLC thank you for your time to read this document, and we thank you for your business!