Spohn Performance | Support Center

What spline axles and center section do I need for a rear end? What is the torque rating on the axles?

How to determine what spline axles and center section you need when ordering a new aftermarket rear end
What size axles should you be running to be sure that you will not break one? A simple formula can be used to help you find the absolute maximum torque your car can put to the ground.

To find the maximum torque, take the (Torque of your engine) x (Your first gear ratio) x (Your rear end gear ratio) x (90% efficiency).

For example, let's say your car has 600 ft. lbs. of torque, you have a Powerglide transmission with a 1.86 first gear ratio, and you have a 4.88 rear end gear ratio. When you put those numbers into the formula, you get the following:

600 ft. lbs. (torque)
x 1.86 (first gear)
x 4.88 (rear gear)
x .90 (efficiency)

4901 ft. lbs. of Torque*

* This is the maximum torque transmitted to both rear axles if the tires have perfect adhesion to the track, and you launch the car at it's peak torque.

Each axle should be able to handle all of the maximum torque your car can produce. That way it is practically impossible to break an axle because you have at least a 200% safety factor.

Axle Ratings:

30 Spline: 6,200 ft./lbs. (per axle)
31 Spline: 7,000 ft./lbs. (per axle)
33 Spline: 8,200 ft./lbs. (per axle)
35 Spline: 9,600 ft./lbs. (per axle)
40 Spline: 12,000 ft./lbs. (per axle)

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