



“How peak torque values are affected by the Output Planet Carrier Tooth Count”

All of Midwest Motion Products' Gearmotors conform to the continuous and peak torque values published on our Data Sheets. However, there are certain gear ratios which will perform to torque levels greater than the published values. When we encounter applications where greater torque is required, but space/cost constraints dictate a more compact or lightweight solution, we often utilize a ratio with a high 'tooth count' sun gear on the Output Planet Carrier. All MMP Gearheads have a varying quantity of planet carrier plates (depending on the number of stages) into which a sun gear is pressed, and through which torque is transmitted. Depending on the gear ratio, the number of teeth in the output sun gear pinion will vary. Again, depending on ratio, the sun gear tooth count values can be 8, 11, 14 or 17. The greater the tooth count on the output carrier sun gear, the greater the amount of engagement, and subsequently, the greater the output torque capacity. So, by choosing the optimal ratio for your application, we can utilize the most robust output sun gear pinion, thereby increasing your output torque capacity. In some cases, this optimization has resulted in more than a three-fold increase in torque. All opportunities for this level of optimization, however, should be considered to be application/duty specific.

When installing a motor, gearmotor, motor control or servo amplifier into any system or equipment, universally accepted engineering practices should always be observed.

Please feel free to refer to [MMP's General Tips](#) webpage for general information regarding proper motor, gearmotor, motor control and servo amplifier usage, to help ensure proper performance, and complete satisfaction with your application.

Please contact our offices if you have any additional questions, or visit www.midwestmotion.com for more information.

MIDWEST MOTION PRODUCTS

DESIGN, MANUFACTURING & DISTRIBUTION - MOTION CONTROL EQUIPMENT

www.midwestmotion.com email: sales@midwestmotion.com