

Pinion Gear

The pinion gear (fig. 1) is attached directly to the motor shaft and drives the spur gear, which interfaces with the transmission. Changing the pinion gear to more or fewer teeth will make big changes to your TC3's run time and top speed.

How do I know when to change my pinion gear?

You need to properly match the pinion teeth number with the spur gear teeth number and your motor. For best results, use the numbers in the chart following.

- The **larger the number of teeth, the greater the speed**, but it results in less run time and too many teeth (overgearing) could harm your electrics.
- The **smaller the number of teeth, the more run time**, but you will attain less top-end speed. ("Top-end speed" refers to the fastest speed you could attain.)
- Consider changing your gearing according to track length. For **larger tracks**, top end would be more important, so try a pinion tooth larger than the chart following. For **smaller, twisting tracks**, try a pinion tooth smaller than the chart.
- Following is the current recommended numbers for the TC3. You should not increase your pinion size by more than one tooth than indicated or you may harm your motor.

Motor	Pinon	Spur	Transmission Ratio
24 deg. ROAR stock	26	72	2.5:1
19 turn spec motor	26	72	
16 turn modified motor	26	72	2.5:1
15 turn modified motor	25	72	2.5:1
14 turn modified motor	24	72	2.5:1
13 turn modified motor	23	72	2.5:1
12 turn modified motor	22	72	2.5:1
11 turn modified motor	21	72	2.5:1
10 turn modified motor	20	72	2.5:1
9 turn modified motor	19	72	2.5:1
8 turn modified motor	18	72	2.5:1
7 turn modified motor	17	72	2.5:1

How do I change my pinion gear?

You loosen the set screw on the pinion gear, slide off the gear, and insert a new one.

On setup sheet

You write in the number of teeth of the pinion gear that you mounted on your motor output shaft. Associated sells 48 pitch stock pinion gears from 14 through 26 tooth, and precision machined 48 pitch pinion gears from 15 through 26 tooth.



Fig. 1 Pinion gears can make big changes to run time and top speed.

TIP

In some circumstances, calculating rollout may give you better results. See the Rollout entry elsewhere in this Guide.

Product info

- #8252, 15 Tooth, 48 Pitch Pinion
- #8253, 16 Tooth, 48 Pitch Pinion
- #8254, 17 Tooth, 48 Pitch Pinion
- #8255, 18 Tooth, 48 Pitch Pinion
- #8256, 19 Tooth, 48 Pitch Pinion
- #8257, 20 Tooth, 48 Pitch Pinion
- #8258, 21 Tooth, 48 Pitch Pinion
- #8259, 22 Tooth, 48 Pitch Pinion
- #8260, 23 Tooth, 48 Pitch Pinion
- #8261, 24 Tooth, 48 Pitch Pinion
- #8262, 25 Tooth, 48 Pitch Pinion