

E-Maxx Two-Speed Instructions

Covers Part #3998

Note: This kit requires a 3-channel transmitter (not included). The TQi transmitter is available separately as Traxxas part #6507 or 6508.

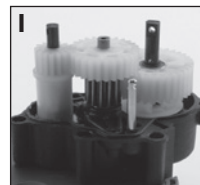
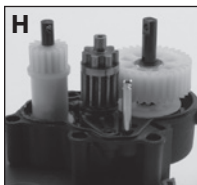
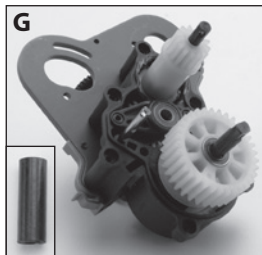
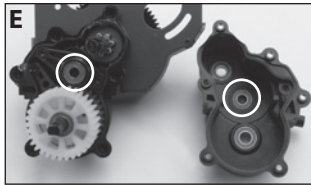
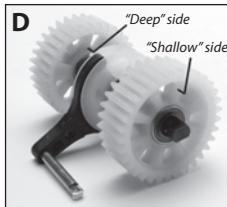
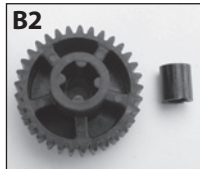
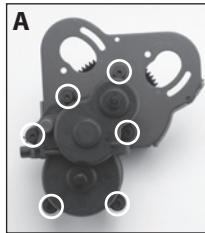
Remove Transmission From Vehicle

1. Remove the upper gear cover from the transmission by removing the 3x6mm cap screw with a 2.5mm hex wrench.
2. Remove the motor pinions using a 1.5mm hex wrench, and then remove the motors with a 2.5mm hex wrench. **Tip:** You may be able to remove the motors without removing the pinion gears. Angle a motor upward slightly and allow the pinion gear to clear the motor plate hole as the motor is being removed backward.
3. Using a 2mm hex wrench, remove the two driveshafts from the transmission by unscrewing the M4x15 screw pins from the output yokes.
4. Using a 2.5mm hex wrench, loosen the four 4x12mm button-head screws securing the transmission, and then remove the transmission from the chassis.

Install the Two-Speed Kit into the Transmission

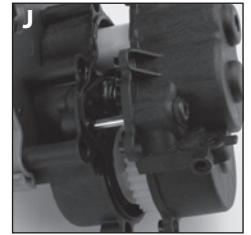
1. Using a 2mm hex wrench, separate the transmission case halves by removing the six 3x12 countersunk screws (A; circled).
2. Remove the main output shaft (B1) and remove its stock gear (B2).
3. Install the selector disc; then, sandwich the two included drive gears on either side (C), noting orientation of each gear as shown. Slide the supplied white nylon spacer onto one end of the shaft, and the gray PTFE washer on the other. **Note:** Each output gear features a shallow side and a deep side. The deep side of each output gear faces the selector disc (D).
4. Insert the selector fork into the selector disc and reinstall the completed assembly into the transmission in the orientation shown (D). **Note:** It is imperative that the end of the assembly with the white spacer be inserted into the front half (spur gear side) of the transmission first.

5. Insert a 5x11mm ball bearing into the shaft support and case half as shown (E; circled).
6. Locate the desired wide ratio (13/26) or close ratio (18/21) gear set supplied with this kit (F). See information on the next page for tips on selecting wide or close ratio gearing.
7. Remove the black spacer from the transmission input shaft (top shaft) and replace with the selected wide or close ratio gear (G).
8. Locate the steel first-gear idler gear, and insert it into the case support (H). Install the matching wide or close ratio gear onto the end of the idler gear as shown (I).
9. Remove the blue plug from the case's shifter port in the rear half. Line up the shafts and carefully



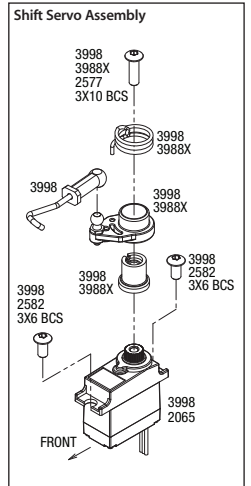
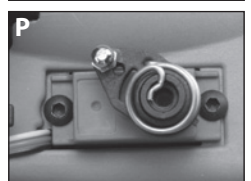
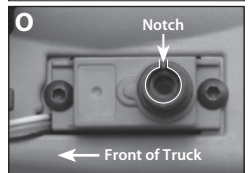
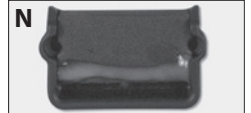
reinstall the rear case half to the front half (J), allowing the shifter fork rod to insert through its port. Reinstall the six 3x12mm countersunk screws into the case halves to complete the transmission assembly.

10. Reinstall the transmission. Installation is the reverse of removal. **CAUTION:** Use care during transmission installation to prevent crushing and damaging the receiver antenna and servo wires. **Note:** Remember to reset your spur gear/pinion mesh as described in the E-Maxx Owner's Manual.



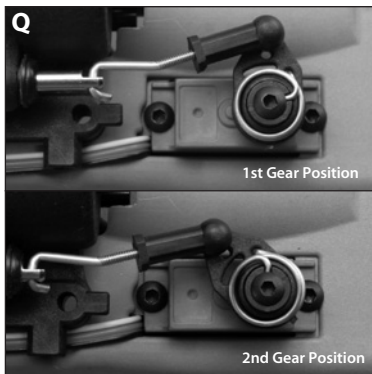
Install Shift Servo and Linkage

1. Punch out the shift servo block-off plate from the chassis and install the shift servo using the two supplied 3x6mm button-head screws (K). **Tip:** It helps to score the plastic with a small knife before removing the plate.
2. Remove the receiver cover by removing the two 3x10mm button-head screws. Remove the wire clamp by removing the two 2.5x8mm cap screws. Lift the receiver to the side.
3. Route the shift servo lead through the water resistant receiver box cover and into channel 3 of the Traxxas receiver (L). Bundle excess wire inside the receiver box (M). **Note:** Take a moment to inspect the receiver box O-ring seals. Maintain the water tight seal by replacing damaged seals and lubricating the foam with a small bead of Traxxas silicone grease (Part #1647).
4. Apply a small bead of Traxxas silicone grease (Part #1647) to the wire clamp (N). Install the wire clamp and tighten the two 2.5x8mm cap screws securely.
5. Make sure the O-ring is properly seated into the groove in the receiver box so that the cover will not pinch it or damage it in any way. Install the cover and tighten the two 3x10mm button-head screws securely. Inspect the cover to make sure that the O-ring seal is not visible.
6. Turn on the vehicle's radio system and flip the shift switch on the transmitter into second gear (down position). Allow the servo to comply.
7. Locate the servo saver and linkage components. Slide the notched servo saver sleeve onto the servo, orienting the notch at the "12 o'clock" position as shown. (O)
8. Install the servo arm over the sleeve and the servo saver spring over the servo arm and notched assembly as shown. (P)
9. Install the supplied 3x10mm button-head screw, using caution to prevent damage from over-tightening.
10. Shift from second to first gear, and verify that the servo arm is moving away from the transmission. If necessary, reverse the shift channel on your transmitter. Insert the shift linkage into the transmission shift rod, pull the selector shaft outward from the transmission, and snap the linkage ball



cup onto the ball stud of the shift servo arm as shown (Q). The result should be a slightly spring-bound positive engagement.

11. **Important:** Verify that the shift linkage is properly adjusted. Cycle between first and second gear, verifying that each gear is engaged with a positive spring-bound engagement.



Tips for ensuring proper installation and engagement:

- Shift to second gear on the transmitter. Roll the truck a few inches so that the shift mechanism can fully engage.
- Check the "pre-load" on the shift spring. You should feel a light resistance on the servo horn.
- Shift to first gear on the transmitter. Again, roll the truck a few inches to fully engage the shift mechanism in the transmission.
- Check the "pre-load" on the shift spring. It should be about the same as it was in second gear (but in the other direction).
- If the spring pre-load does not feel similar in first and second gear, remove the servo horn and reinstall, starting with step 6, and make the following adjustment:
 - If the spring was tight in second gear, but loose in first gear, install the notched servo saver sleeve one tooth clockwise from the original position (see step 7).
 - If the spring was tight in first gear, but loose in second gear, install the notched servo saver sleeve one position counterclockwise from the original position (see step 7).

- **Close Ratio (18/21):** Ideal for most environments. The new first gear provides more torque and lower top speed for climbing and driving through mud, grass, and snow, but when shifted into second provides the same top speed as the stock single speed. With this set, first gear features a "close" numerical gear ratio to second gear, which has the same ratio as the stock single-speed gear ratio. Ideal for almost seamless shifting into second for quicker acceleration, this set is recommended for most conditions.
- **Wide Ratio (13/26):** This gear set provides the most extreme first gear ratio for maximum torque and low-speed control. This is best for rock crawling, thick mud and grass, or when speed in first gear is not a concern. The numerical gear ratio value between first and second gear is further from each other in this set, allowing this "wide" ratio gear set the lowest first gear ratio. Because second gear is unchanged, top speed remains the same as the stock single speed.

Gear Ratio Calculations:

2nd Gear (Same as single speed):

$$\text{Spur} / \text{Pinion} \times 5.22 = \text{Final Drive Ratio}$$

1st Gear (Close Ratio):

$$\text{Spur} / \text{Pinion} \times 8.43 = \text{Final Drive Ratio}$$

1st Gear (Wide Ratio):

$$\text{Spur} / \text{Pinion} \times 14.45 = \text{Final Drive Ratio}$$

Example using stock 68/19 gearing:

2nd Gear (Same as single speed):

$$68 / 19 \times 5.22 = 18.7:1 \text{ Final Drive Ratio}$$

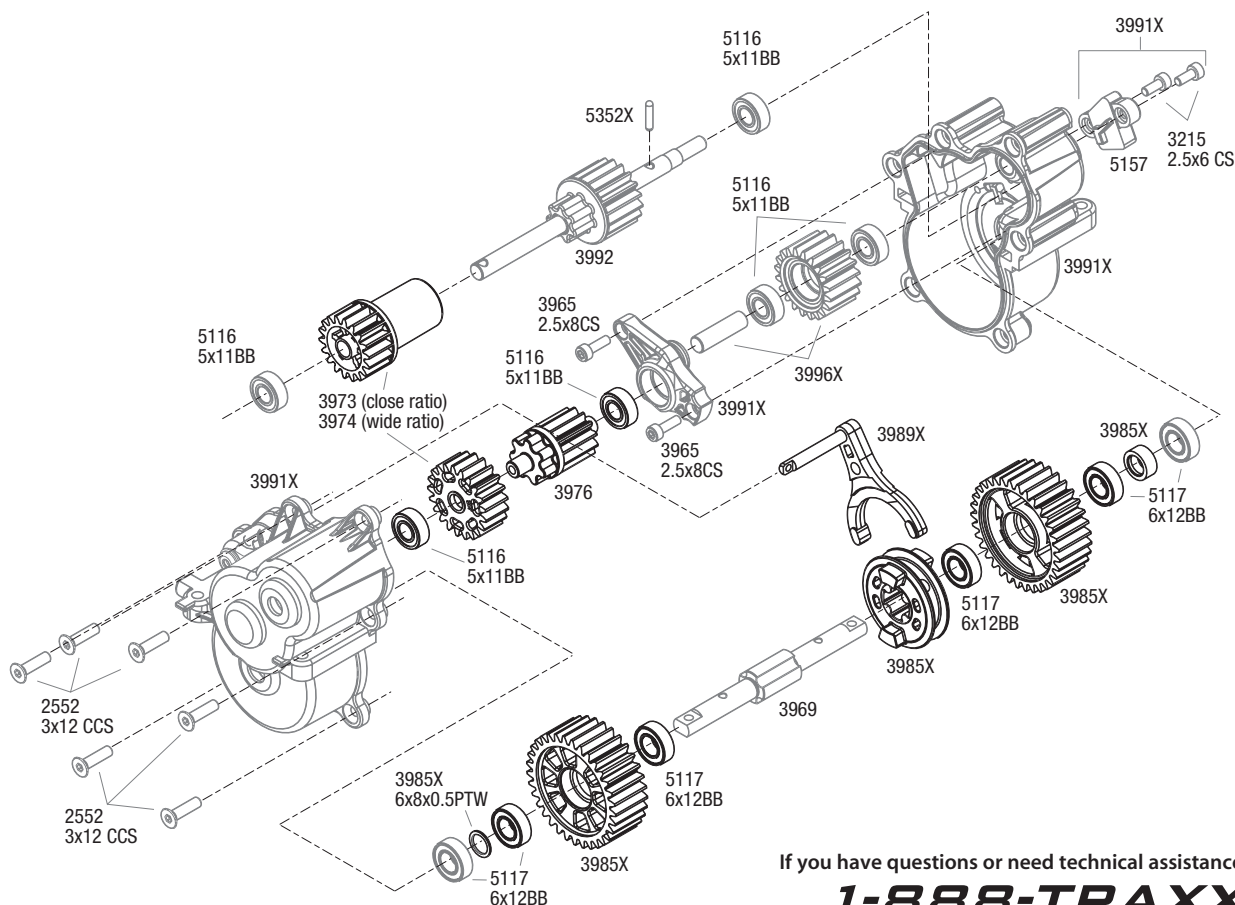
1st Gear (Close Ratio):

$$68 / 19 \times 8.43 = 30.2:1 \text{ Final Drive Ratio}$$

1st Gear (Wide Ratio):

$$68 / 19 \times 14.45 = 51.7:1 \text{ Final Drive Ratio}$$

Selecting the Wide Ratio or Close Ratio Gear Set



If you have questions or need technical assistance, call Traxxas at

1-888-TRAXXAS

(1-888-872-9927) (U.S. residents only)